Spatial Planning and Well-being: a Survey on the Swiss Case

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Spatial Planning and Well-being: a Survey on the Swiss Case

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Declaration

I hereby declare that the contents and organisation of this dissertation constitute my own original work and do not compromise in any way the rights of third parties, including those relating to the security of personal data.

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2018

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By far the greatest and most admirable form of wisdom
is that needed to plan and beautify cities and human communities.

Socrates

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Abstract

This research starts from the premise that it is important to understand the relationship between the operation of spatial planning and life satisfaction, and to identify how they are effectively connected. It therefore brings together two concepts often considered separately, or connected in an axiomatic way, in the literature: spatial planning and well-being. This separation or simplification, although understandable as convenient from a disciplinary viewpoint, requires attention, since the promotion of citizens' well-being objectives traditionally lies at the heart of spatial planning legitimation.

One of the aims of the research is to try to develop an analytical framework which will enable us to better understand the connection between efficient and sustainable spatial development and well-being. In order to do this, the study explores and frames the relationship between a spatial governance and planning system and its performance from a place-based perspective, taking into consideration recent trends and innovations. Yet every country has its own spatial planning system embodying different administrative, legal and social traditions. Switzerland, the country chosen for the survey, is an interesting country to study from a spatial governance and planning point of view, because of its historical, geographical and cultural features, as well as its reputation for a high level of administrative and organisational efficiency. However, it currently faces a number of spatial planning challenges, which can also affect the present and future well-being of its citizens, such as urban sprawl and other land use issues.

In order to understand the nature of the Swiss planning system, a four-dimensional model (Janin Rivolin 2012, Cotella & Janin Rivolin 2015) is applied. It is presented and analysed in terms of structure, tools, discourse and practices, to shed light on the factors underpinning the planning system and its functioning; and likewise on the extent to which the quality of life of the country is intertwined with the efficiency and effectiveness of its planning system. As in many other countries, spatial planning methods and issues in Switzerland have changed considerably in recent years, so the planning process is moving towards a more strategic and flexible management of the territory. Yet, the country also has a number of specific features which make it unique, such as its strong tradition of direct democracy and its positioning in the heart of Europe, but outside the EU.

In relation to spatial planning, indicators measuring the outcomes of a policy or the performance of a planning process may help to provide information on whether the process is getting better, worse or staying more or less the same, therefore supplying data that could be used to evaluate its efficiency. However, choosing indicators useful for policy-making can be complex. The research examines this issue in depth as regards the Swiss case, in terms of spatial governance and planning, focusing especially on the three dimensions of economic, environmental and social well-being. The interactions between spatial planning and well-being in the country are then looked at as regards these dimensions in order to assess spatial planning's influence and impact.

The study provides a state of the art overview of the Swiss system and reappraises the country's collocation in European planning classifications. Among its findings, the research suggests that reliable measurements on the connections between spatial planning and well-being could be useful for policy-making. It also endorses Zetter's (2008) assumption that the planning system makes a positive contribution to Switzerland's high economic, environmental and social standards.

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List of Acronyms

ARE: Federal Office for Spatial Development

BRP: Bundesamt für Raumplaning [BRP is the German for ARE]

CEC: Commission of the European Communities

CIS: Community Innovation Survey

COMPASS: Comparative Analysis of Territorial Governance and Spatial Planning Systems in Europe

DETEC: Federal Department of the Environment, Transport, Energy and Communications

DRP: Delegierter für Raumplanung [Spatial Planning Delegation]

EC: European Commission

EFTA: European Free Trade Association

EIA: Environmental Impact Assessment

EPI: Environmental Performance Index

EUROSTAT: Statistical Office of the European Union

ESDP: European Spatial Development Perspective

ESPON: European Spatial Planning Observation Network

EU: European Union

EU-SILC: European Union Statistics on Income and Living Conditions

ETC: European Territorial Cooperation

FDFA: Federal Department of Foreign Affairs

FOEN: Federal Office for the Environment

FSO: Federal Statistical Office

GDP: Gross Domestic Product

GII: Global Innovation Index

GIS: Geographical Information System

HDI: Human Development Index

ILO: International Labour Organisation

INTERACT: EU programme which supports European territorial cooperation programmes (e.g. INTERREG)

INTERREG: European territorial cooperation programme which helps regional and local governments across Europe to develop and deliver better policy

ISCED: International Standard Classification of Education

ISOCARP: International Society of City and Regional Planners

QoL: Quality of Life

LAU: Local Administrative Unit

MONET: Monitoring der Nachhaltigen Entwicklung [system of indicator which monitors sustainable development in Switzerland]

NPM: New Public Management

NRP: Neue Regionalpolitik [New Regional Policy]

NUTS: Nomenclature des unités territoriales statistiques [Classification of Territorial Units for Statistics]

OECD: Organisation for Economic Cooperation and Development

OPT: Ordinance on Planning of the Territory

ORL: Institute for National, Regional and Local Planning

PPP: public-private partnerships

ROK: Raumordnungskonferenz [Conference of the Confederation for Territorial Organisation]

ROR: Raumordnungsrat [Federal Committee for Spatial Development]

PRIPS*:* Piano Intercomunale della Stampa [the Stampa Intercommunal Plan]

RPG: Bundesgesetz über die Raumplanung [Federal Law on Spatial Planning]

RTPI: Royal Town Planning Institute

SDC: Swiss Agency for Development and Cooperation

SEA: Strategic Environmental Assessment

TANGO: Territorial Approaches for New Governance

TEN-T: Trans-European Networks – Transport

UN: United Nations

UNECE: United Nations Economic Commission for Europe

URBACT: European exchange and learning programme sustaining urban development

USAM: Union Suisse des Arts et Métiers [Swiss Trade Association for Small and Medium Enterprises]

VLP-ASPAN: Vereinigung Landesplanung Schweiz [Association Suisse pour l'Aménagement National, Swiss Spatial Planning Association]

WTO: World Trade Organisation

WUP: Weighted Urban Proliferation

Chapter 1

Introduction

This chapter presents the rationale underpinning the research and its main focus on the relationship between spatial planning and well-being. In the first section (1.1), the study's aims, objectives and research questions are set out and the Swiss survey is introduced; some of the reasons why it is interesting from a spatial planning point of view are then presented. The second section (1.2) provides a brief overview of the methodological approach and the applied models. The third section (1.3) delineates the research hypotheses to be investigated and verified during the study, while the final section (1.4) explains how the successive chapters are organised.

1.1 Rationale, aims and research questions

This study brings together two concepts often considered separately, or axiomatically connected, in the literature: spatial planning and well-being. The separation or simplification, although perhaps convenient from a disciplinary viewpoint, should be considered with greater attention, since the promotion of citizens' well-being through the achievement of a wide range of economic, social and environmental objectives traditionally lies at the heart of spatial planning legitimation (see e.g. Howard 1898, Healey & Hillier 2008, Fainstein 2010, Joyner 2012, Brown et al. 2015, Barton 2017). Moreover, linking the two concepts can be mutually beneficial, shedding light on the deep, sometimes invisible, factors underpinning a planning system and its functioning; and likewise on the extent to which the quality of life (QoL) of a country is interlinked with the efficiency and effectiveness of the spatial planning system. As Barton (2017: 8) points out, "well-being can provide a unifying theme linking the economic, social and environmental goals of planning – often perceived as at odds with each other – and consistent with the overarching principle of sustainable development".

One of the main hypotheses underlying the research is that there should be a connection, even though not necessarily a linear and evident correlation, between the efficient performance of a planning system and the standard of living of a country, especially in relation to the way spatial development rights are established. For, if we accept that the task of efficient and successful spatial governance and planning is to ensure that everyone has a suitable living space, then land use and development rights have a fundamental importance. Thus, the aim and focus of the research is to understand the interface between a spatial governance and planning system and its efficient performance, as well as to uncover possible correlated and beneficial QoL factors. Therefore, the study will seek to answer the following core research questions:

- Which is the link between efficient and successful spatial planning and standard of living?
- How can the complexity of spatial planning issues be combined with the complexity of QoL?
- Is there an effective way to evaluate a planning system's efficiency and performance in terms of citizens' well-being?

To do this, the research will explore and frame the relationship between a spatial governance and planning system and its performance from a place-based perspective (Barca 2009), taking into consideration recent trends and innovations. Such an approach emphasises the contextuality of spatial planning and enables the specific local characteristics to be taken fully into consideration, as is explained in 2.3.1. In particular, the study will investigate and analyse spatial planning in Switzerland, in the light of the country's strong performance in recent QoL and well-being surveys, such as the OECD Better Life Index. Ten years ago, as part of an analysis of spatial planning and development in Switzerland by an international group of experts, Zetter (2008) made the interesting assumption that among the many factors making a positive contribution to the country's high economic, social and environmental standards, is the planning system. Although he observes that the relationship has never been comprehensively evaluated (see 5.2). The present research aims to make a contribution towards addressing the issues underlying Zetter's assumption.

The context of the research will thus be the spatial planning system of Switzerland, a federal country divided into cantons that has to a certain extent been somewhat overlooked by the main studies of comparative planning traditions in Europe (e.g. Davies et al. 1989, Newman & Thornley 1996, CEC 1997), in order to identify its main features, also at a cantonal level, and to reappraise its classification. Moreover, while the federal system can be found in many other countries like the USA, Germany, Austria and so on, no other nation seems to delegate as many competences to federal states and communes as Switzerland does. A further aim of the study is thus to find out if there are great differences in spatial planning in the various cantons, and how the Swiss system integrates its

citizens' preferences and insights into policymaking, for example in the light of the federal referendum on spatial planning of 3 March 2013 (see 4.2.2.1, 4.3 and 4.4.1, where the referendum is presented and discussed).

In any case, because of its historical, geographical and social features, Switzerland is a fascinating country to study from a spatial governance and planning point of view. The country is also famous for being systematically efficient from an administrative and organisational perspective. Indeed, Switzerland performs very well in terms of well-being compared to most other countries, for example in the OECD Better Life Index. Moreover, in recent years Switzerland has gained increasing international recognition as a model of good practice for public land management. Even though it is a relatively small country, Switzerland has long served as an institutional model for several countries, such as Singapore, in recent times. Indeed, in 1984, the then Deputy Prime Minister Goh Chok Tong promised that Singaporeans would achieve a 'Swiss standard of living' by 1999. The similarities between both countries have inspired Singapore to see Switzerland as a model of how to expand the economy and develop a world-class workforce (Koh & Guo 2014), although in reality there are major differences between the social and political organisations of the two countries and their implementation of spatial planning (see Shatkin 2014 for a recent analysis of spatial planning in Singapore).

Overall, the study aims to extend comparative studies on spatial planning by means of evaluative criteria, supplementing traditional classifications of planning systems (e.g. CEC 1997). In this respect, it needs to be remembered that evaluating planning systems is something different from evaluating plans (Janin Rivolin 2008: 169-171). Moreover, a number of studies on planning have emphasised the importance of measuring planning's contribution to community well-being and to environmental quality, even though this is a complex undertaking (Gleeson 2002, Carmona 2003a, Carmona & Sieh 2004). Among the possible approaches, one potential way to carry out this research is to try to apply the five OECD evaluation criteria, which several national governments, the EU and various international development agencies have adopted for guiding policy assessment, that is: relevance, efficiency, effectiveness, impact and sustainability, as suggested by Janin Rivolin (2012: 78-79).

1.2 Brief overview of research methodology and applied model

After carrying out a detailed literature review to explore and evaluate the mechanisms underlying the concepts of spatial planning system and well-being, the research has involved data gathering, including the analysis of relevant legal documents and official reports, in order to carry out the survey on the dynamics of spatial governance and planning in Switzerland. The methodology aims to enable the results of the analysis to be checked and combined with those obtained through other methods, using a process of triangulation, so as to allow statistical and graphic representation, as well as replication and comparison with other surveys and studies, with the further objective of promoting dialogue and developing channels of enquiry. Thus, existing performance indexes, such as the OECD Better Life Index, the OECD conceptual framework for measuring well-being in regions and cities, and the Swiss MONET system of sustainable development indicators are taken into consideration, as well as other international studies on similar topics. The methodology also aims to identify the best ways to investigate and monitor the efficiency of sustainable development and understand if sustainable development is achieved in the current system. This could well lead to, in a second and further phase of research, the trialing and possible creation of an 'analytical toolkit', which could then be applied in other contexts and potentially enable more accurate forecasts to be made.

In order to understand the nature of the domestic planning system, a four-dimensional model is applied. According to Janin Rivolin (2012: 73; see also, Cotella & Janin Rivolin 2015), the formation and evolution of spatial governance and planning systems depends, briefly, on: the existing 'structure', with its set of constitutional and legal provisions; the 'tools', such as spatial plans, programmes and control devices, as drivers of 'new' practices; a competitive phase of 'discourse' between the various interested actors; a particular context of 'practices', the social experience of local urban policies through regional plans and projects. So as to understand how spatial planning works in Switzerland, the analysis of the spatial governance and planning system will focus on these four main dimensions and, simplifying, answer the following questions:

- What is the administrative setting?
- What are the main planning instruments?
- How do ideas and discourses spread through collaborative planning processes, and do they influence planning approaches in the involved regions?
- What is the social experience during the application of local practices?

Following the report of the World Commission on Environment and Development: Our Common Future (Brundtland 1987) the concept of sustainable development is commonly understood as pursuing the three dimensions of economic, environmental and social sustainability. In order to understand the sustainability of the Swiss planning system, the same three main analytical dimensions are therefore taken into consideration as follows:

- the economic dimension (e.g. growth, efficiency, stability);
- the environmental dimension (e.g. resilience, biodiversity, natural resources, pollution);
- the social equity dimension (e.g. empowerment, inclusion, consultation, institutions, governance).

These three dimensions are analysed at the various governmental levels, which are the federal level, the cantonal level and the local level. In particular, in order to appraise these dimensions, the main development plans and current projects are investigated, giving a special focus to the impact of practical local projects, the way construction rights are established and the interaction of stakeholders.

1.3 Hypotheses

Briefly, the main hypotheses that the present research tries to verify are the following:

1) It is worth exploring the connection between the efficient performance of a planning system and the well-being of a country, also in relation to the way property rights and land use regulations are established and maintained.

2) Efficient and successful spatial planning ensuring that everyone has a suitable living space can only be achieved if all the stakeholders (public authorities, private construction companies, citizens, academia, etc.) assume mutual responsibility for the various related factors, such as housing and the environment.

3) Estimating the socioeconomic effect of spatial planning, especially as the main tool of land use regulation, is extremely complex since the variety of local land use enactments makes it difficult to untangle the link between regulation and its effects (see Quigley & Rosenthal 2005: 72) and planners may not seek enough efficiency in resource allocation. In addition, the very different institutional arrangements in which spatial planning is applied all over the world make it extremely difficult to identify and compare its effects. Nevertheless, this is a field in which progress needs to be made, in order to understand not only the consequences but also the causes of the planning of land use.

4) Spatial planning in Switzerland is an interesting case for a survey studying these issues. For, although spatial planning in Switzerland is generally

acknowledged as good, according to the observations and suggestions from the international group of experts who were invited to the country in 2006 in order to assess the country's spatial planning functions, opportunities and limitations and make recommendations, "it does not meet the high requirements of sustainable development yet" (Scholl 2008: 6).

5) The existing methodological tools for analysing the governance and planning systems are useful, but need to be reappraised and fine-tuned in order to enable valid comparison and evaluation of systems in terms of their socioeconomic effects.

1.4 Organisation of the study

After this introduction (chapter one), chapter two provides a framework for the main topics covered in the thesis. This literature review thus looks at the changing conceptions of spatial development, governance and planning, as well as the related externalities, including efficiency and performance. It focuses on issues such as speed of procedures and implementation, equity and (in)equality, sustainability, before turning to the notions of well-being and QoL. The context of the study, Switzerland, as well as some of its particular features, such as direct democracy, local autonomy and its relationship with the European Union, are also briefly introduced.

Chapter three describes the methodology and the four-dimensional analytical model used in the study. The conceptual framework is presented and discussed, as well as the data, sources and indicators used in the research. These are looked at in terms of the three dimensions (economic, environmental and social) of well-being which will be focused on in chapters four and five. The main surveys and sources of information for understanding these issues in the Swiss context are then set out, and the chapter also looks at the criteria for evaluation and the challenges of this kind of research endeavour.

Chapter four consists of an in-depth overview of spatial planning and territorial governance in Switzerland using the model presented in chapter three. The main features of the country's federal and cantonal structure and its delegation of responsibilities at the local level are described and discussed; then the country's planning and governance system is analysed in terms of the chosen analytical model, thus as regards structure, tools, discourse and practice. The positioning of Switzerland in the various comparative studies of European spatial planning classifications is also reappraised.

In chapter five, some themes which are especially relevant to the study, such as the concepts of economic, environmental and social well-being, are looked at with a particular focus on the performance of Switzerland. The chapter also concentrates on the evaluation, measurement and the choosing of indicators, in

order to further analyse the situation of Switzerland and to see how the country's spatial governance and planning system contributes to the country's achievement of a high ranking on the international well-being performance scales.

Chapter six concludes the thesis, presenting some general considerations and highlighting the main findings. It returns to the research hypotheses presented above (1.3) and especially to the interactions between spatial governance and planning and well-being, which lie at the heart of the study. It also discusses some of the features which specifically characterise spatial governance and planning in Switzerland, including its relationship with the European Union. After some further reflections, a number of recommendations are made in the light of the findings and their implications for possible future research in the field.

During the course of the research the author has attended various conferences, seminars, workshops and masterclasses. These, together with her participation in the 2016-18 ESPON COMPASS project, provided the stimulus for the presentation and dissemination of work carried out during the PhD programme and have led to a number of publications (Solly 2016a, Solly 2016b, Solly Forthcoming, Berisha et al. Forthcoming), material from some of which is included in chapter two and section 6.2.4 of the thesis. A number of the tables and research findings presented in chapters four and five were also prepared for the ESPON COMPASS project.

Chapter 2

Framing the topic

This chapter briefly introduces the main issues that this research will put into mutual relationship, i.e. spatial planning, well-being and the Swiss context. In particular, it presents some of the related aspects that are currently discussed in the scientific and social debate, for example: efficiency and effectiveness, externalities, performance management, speed, transparency and democracy, equity and (in)equality, sustainability, well-being and quality of life (QoL). It starts (2.1) with an overview of the growing importance of spatial planning conceptions and studies in recent years (including a discussion of some of the changes currently taking place, such as the changing conceptions of governance). It then looks at well-being and its spatial dimension (2.2), before briefly introducing the usefulness of a place-based approach and the survey on spatial planning in Switzerland (2.3). It also focuses on some aspects of the European dimension, including key issues related to measuring the performance of Cohesion Policy in terms of effectiveness and well-being.

2.1 Spatial governance and planning

2.1.1 Change and changing conceptions of spatial development

There can be no doubt that great and rapid change is taking place in the globalised world of today. This is particularly evident in the field of urban studies where the role of cities is also changing (Rickards et al. 2016). Indeed, with the conceptualisation of cities today as ‘smart’, they are often seen as drivers of both the local and the global economy, hubs of digital creativity and innovation. Yet, at the same time, the growing concentration of the population and economic

activities in built-up environments has increased and exacerbated environmental and social issues, which require coordinated solutions, as noted by the EU Ministers Responsible for Cohesion Policy at the Informal Meeting that took place in Athens on 24 April 2014. Moreover, as Perulli (2014) points out, the static idea of the State guaranteeing a permanent security has given way to the "infinite mobility of knowledge, capital, goods and people". Notions as regards the exact nature of governance and of stakeholders are evolving, and new systems of cross-scale governance are giving voice to the interests of a number of informal and non-governmental institutions.

Conceptions of geographical regions and cultures are also in a state of flux, as Steinhauer (2011) notes, under the impact of changing planning strategies and objectives and of knowledge exchange beyond national borders. Cross-border cities and regions have long faced issues of political limitations and of fragmented multi-level governance due to cultural and social systemic differences. Yet there are economic advantages to be gained from the spanning of borders, and these city-regions are often today complex toolboxes of digital and creative innovation, working together in order to overcome 'barriers' and, in some cases, they have given rise to new jurisdictional forms (Abrahamson 2014). Johannes Hahn, the EU Commissioner for Regional Policy, has highlighted the importance of European regions working together in order to meet shared economic, environmental and security related challenges (Hester 2014: 35).

Moreover, globalized practices can have high economic, environmental and social impacts on local communities which are then forced to face new challenges, such as how to cope with climate change and social inequalities. Nevertheless, even though existing consumption patterns may exacerbate existing inequalities, emerging networks may give rise to institutional change and the promotion of social equality and environmental justice (Carmin & Agyeman 2011). This can be seen in the emphasis currently given to working through new scales of governance and the emergence of 'soft spaces' (Allmendinger et al. 2015).

2.1.2 Spatial governance and planning systems

In recent years, the catchword 'spatial planning' has echoed in many planning circles (Böhme 2002: 3) and more in general has been adopted since the mid 1990s in the EU terminology, giving rise to a lot of debate. The term was initially chosen to differentiate planning at a European level from the national level of the Member States (COMPASS 2016). Then, the use of the term 'spatial planning' has made it possible, in large part, to provide a unifying conception that enables the different national terminology traditionally used in the debate, such as 'town and country planning' (UK), *urbanistica* (IT), *aménagement du territoire* (FR), *Raumplanung* (DE) etc., to be compared. It is considered a "key instrument for

establishing long-term, sustainable frameworks for social, territorial and economic development both within and between countries" (UNECE 2008: vii).

Despite this cultural convergence, the notion of 'spatial planning system' still seems to lack a reliable definition. It tends to be used as a "generic term to describe the ensemble of territorial governance arrangements that seek to shape patterns of spatial development in particular places" (Nadin & Stead 2008a: 35). In Böhme's view (2002: 40), the term alludes to "an eclectic field linking numerous aspects, which is highly influenced by for example a country's history, geography, cultural traditions, political orientation, prevailing ideology, state of economic and urban development, constitutional government structure or legal constitutional framework". The most widely accepted definition so far of spatial planning system has been developed in the EU Compendium of Spatial Planning Systems and Policies (CEC 1997), which describes it as the ensemble of methods used largely by the public sector to influence the future distribution of activities in space, with the "aim to create a more rational territorial organization of land uses and the linkages between them, to balance demands for development with the need to protect the environment, and to achieve social and economic objectives" (*ibid.*: 25-27). However, the Compendium seeks to define more precisely the meaning of the terms used in each country, rather than to suggest that they allude to the same institutional function.

The spatial resolution of complex economic, environmental and social objectives is broadly what planning aims to achieve (Carmona & Sieh 2004: 35). In brief, "the activity of creating and managing the built environment is a creative problem-solving activity in which objectives and constraints are weighed up and balanced, and solutions which best meet a set of defined needs are derived" (*ibid.*: 4). However, effective spatial planning not only depends on an effective operation of the statutory planning processes, but also on an ability and willingness to work outside the system. In fact, it requires planning authorities to work alongside a wide range of private and public sector interests in order to negotiate and coordinate objectives and activities to meet agreed ends (*ibid.*: 36).

Mazza (2015: 3) draws attention to the intrinsic relationship between spatial governance and citizenship, where spatial governance "is used to identify the political processes that articulate and legitimise urban and territorial changes and to emphasise the role of government in the control of space". For him the relationship is reciprocal: "spatial governance produces citizenship, either deliberately or unwittingly, and in turn spatial governance is justified and substantiated by citizenship. The two enjoy a circular relationship that shows the nature of spatial governance, which is traditionally obscured by other physical and social effects that are more immediately perceptible and usually perceived as its substance" (*ibid.*: 4-5).

Some scholars are increasingly drawing attention to the need to focus on this wider interpretation of the concept of spatial governance, which also seems

evident in the current approaches to land use in Switzerland, as will be seen in chapter four. Indeed, the ESPON TANGO (Territorial Approaches to New Governance) 2011-2014 project provides a working definition of territorial governance as the "formulation and implementation of public policies, programmes and projects for the development of a place/territory by: coordinating actions of actors and institutions; integrating policy sectors; mobilising stakeholder participation; being adaptive to changing contexts; realising place-based/territorial specificities and impacts" (ESPON & Nordregio 2013: 8). This definition is applied to the Swiss context in more detail in 5.3.2 and 5.3.3. In any case, there is a considerable overlap between territorial governance and spatial planning (COMPASS 2016), which would certainly deserve further clarification.

The notion of 'institutional technology' (Mazza 2003) is helpful to understand the systems of spatial governance and planning and how they are shaped. In this view, such a system should be understood overall as a 'hinge' between the 'government system' and the 'spatial production and consumption system' (*ibid.*: 54-55). According to this conceptualisation, the variety of practices generated from the social experience of planning and control activities in an institutional context is the continuous source of an evolutionary process, where the system's operation is "continuously and variously challenged and stimulated by other public and private design technologies" (Janin Rivolin 2012: 70). The concept of institutional technology will be further discussed in paragraphs 3.2 and 5.2.1 (in relation to the Swiss spatial planning system).

Be that as it may, urban and territorial policies and their effects depend to a great extent on the operation of spatial governance and planning systems defined within particular institutional contexts; each country has its own planning system due to its different administrative, social and technical traditions. Indeed, even though the term 'spatial planning' is comparatively new, its activity is rooted in traditions long present in all institutional contexts. Thus spatial governance and planning systems can be differentiated in terms of national constitutional and legal structures, and by political, cultural and socio-economic patterns which have led to the development of specific forms of law and government, of administrative and professional cultures (Healey & Williams 1993, Newman & Thornley 1996, Nadin & Stead 2008a).

This variety of traditions reflects the great number of factors influencing planning in practice, and scholars highlight how comparative research on spatial planning systems began rather recently, in parallel to the process of European Community integration (Davies et al. 1989, Healey & Williams 1993, Newman & Thornley 1996, Balchin et al. 1999, Janin Rivolin 2012, Reimer et al. 2014). In any case, it needs to be highlighted that the influence of mutual learning on national systems and policies of planning is still uncertain (Nadin & Stead 2008a: 35) and is methodologically difficult to define and measure. In fact, external

factors (e.g. financial crises, international directives etc.) may be constantly influencing the functioning of a domestic planning system.

Not all of the developments and outcomes presented in the Swiss survey are the consequence of spatial planning decisions or policies. Yet, every spatial transformation (e.g. urban sprawl) is in a certain way influenced by technical or political decisions. This is why the research has chosen to use the term 'spatial governance and planning' (Janin Rivolin 2017) in order to broaden the spectrum and take into consideration both technical and policy dimensions.

Ultimately, spatial governance and planning is a complex activity aimed at the public control of the constantly changing economic, environmental and social conditions in a certain country or area, which also envisages the desired future state of the spatial development. In the Swiss case, the three main national languages (Italian, French and German) use the terms *pianificazione del territorio*, *aménagement du territoire* and *Raumplanung* respectively, while the Federal Office for Spatial Development (ARE), the Swiss Spatial Planning Association (VLP-ASPAN) and the English translation of the Constitution (English is not an official language in Switzerland) generally use the term 'spatial planning' in their documents. It is therefore a term which enables fruitful comparison and discussion to take place at both a national and international level.

2.1.3 Spatial planning efficiency and evaluation

The concept of efficiency has been defined as "the quality of doing something well and effectively, without wasting time, money or energy" (LDOCE 2003: 502). Originally, efficiency was a management concept, taken from business performance measurement studies, which relates the cost of the inputs to the value of the outputs and is usually monetary. Therefore, every resource should be allocated to serve in the best possible way while keeping inefficiency and waste to a minimum. A good example is that "strategies that improve the overall economic efficiency of firms can also yield important environmental benefits" (OLDOAE 2014: 264). In the public sector, efficiency usually relates to attributes such as speed or volume of output, and Carmona & Sieh (2004: 112) define the concept as "the speed, competence and correctness with which processes are operated", with significant economic, environmental and social consequences in decision-making (see 2.1.6 below). Janin Rivolin (2012: 79) echoes the OECD definition of efficiency (2009: 187) to state that the efficiency of a planning system should be understood as a measure of how economically the established tools can convert resources/inputs (e.g. expertise, funding, time) into results (see also 5.2.1).

Seen through the economic lens, efficiency has a particular meaning, as Cheshire & Vermeulen (2009: 151) argue in their study of land markets, regulation and planning. They point out that it is practically impossible to redistribute goods or re-allocate resources without negatively affecting the welfare of at least one individual, which touches on the issue of equity (see 2.1.7). A

further distinction is made by economists between the best a society can achieve in the light of the actual distribution of wealth and income, which is efficiency; and the decisions a society might take collectively in order to distribute wealth and income more fairly, which would be more equitable. In fact, if efficiency is used to analyse outcomes, it should be noted that such an analysis will not necessarily take equity in account. Cheshire & Vermeulen (*ibid.*: 151-152) draw attention to two key aspects of market regulation systems. In the first, they examine the paradox that, while the outcomes which markets generate can be optimal or socially optimal under certain conditions, "the conditions that would have to hold for markets to deliver a socially optimal outcome almost never hold in practice".

For them, the best kind of regulation makes interventions which guarantee as far as possible that (*ibid.*: 152) "the conditions leading to market failure are eliminated or, more realistically, their influence is minimised, attempting to achieve something close to a 'second best'". Thus, policies which have to deal with identified sources of market failures and government actors are expected to intervene to ensure fair competition, regulate monopolistic practices, and design solutions to reduce pollution and the deleterious effects of climate change.

The second aspect Cheshire and Vermeulen point out is related to welfare economics and the notion that "whatever its distributional properties, every outcome that is efficient can be attained in a market economy by transferring money directly between agents. So if society, for example, really prefers an outcome in which every agent is equally well off, irrespective of their endowments in terms of human capital, it can attain this outcome by transferring money to agents with little human capital and leave the allocation of commodities to markets" (*ivi*).

Moreover, the notion of efficiency in public and private organisations is usually linked to managerial organisation and the idea that, for example, local government efficiency is improved by professional city managers. However, existing evidence, as Ihlanfeldt (2005: 16) points out, does not support this hypothesis; indeed such governments might even be less efficient. While Hambleton (2014: 19) emphasises the importance of a spatial planning civic leadership that is concerned with the place-based (2.3.1) nature of the local community. Efficiency in planning is in any case intrinsically linked to issues of measurement and evaluation.

In the past, evaluation studies of planning focused more on the policy impacts, looking at a specific planning instrument or policy, such as transport and mobility. More recently, the Royal Town Planning Institute (RTPI 2008: 28) has emphasised the importance of using a broader interpretation that includes "the combined effects of socio-economic and environmental changes brought by the planning system and other forces to achieve the objectives of sustainable development and sustainable communities", briefly defined as outcomes. Thus,

outcomes reflect more than just policy objectives. For Bradford & Robson (1995), the outcomes of urban policies are broad measures reflecting the QoL of people residing and working in cities, including lower levels of crime and unemployment, and a better living environment. Dželebdžić & Bazik (2011: 28, original emphasis) argue that the focus of the planning approach has "moved from the quantitative approach of capacity and representation, through land-use, to the *quality* of life in relation to the level of pollution, safety and health of inhabitants, and work conditions or aesthetic standards from a global to a local scale and vice versa". Bradford and Robson (1995) further observe that an overall evaluation of policy inputs on outcomes is needed in order to assess the impact of urban policies on the conditions in cities. Yet, Dželebdžić & Bazik (2011: 32) emphasize the time required before the effects of spatial planning policies become evident: "spatial planning takes two to three years to see some immediate effect of the policy and at least five or more years to measure any medium to long term effect of spatial planning policies".

Even though researchers are pointing out that monitoring and evaluation of planning systems should focus more on outcomes and effectiveness, the majority of studies "tend to be more about processes and are commonly measured in terms of administrative efficiency, numerical returns and cost implications" (RTPI 2008: 24). This distinction between the processes of planning and the actual outcomes that result from planning activity is important in order to create an effective framework for monitoring and measuring the quality of decisions (Carmona 2007: 4) and thus to find a solution to the ongoing challenge of how to measure the outcomes and effectiveness of spatial planning policies.

In any case, the overall objective of evaluation in spatial planning is to carry out research studies on specific development projects, in order to draw lessons for future design and implementation (OECD 2010: 8), which can be useful for policy makers and stakeholders. It also helps to reveal and explain possible "discrepancies between the planned and actual implementation of the development intervention" (*ibid.*: 14), focusing on the outcomes of spatial planning.

As pointed out in section 1.1, efficiency is often linked to the Swiss way of doing things. It is therefore an interesting feature to explore in relation to the country's spatial planning system, also in relation to the fourth hypothesis (1.3) on assessing the actual performance of the Swiss system, and the emphasis in the fifth hypothesis on valid evaluation. Sections 2.3.4 and 5.2.2 below focus on this in more depth, also in order to see whether and how the country's spatial planning and governance system functions in terms of the OECD's evaluation criteria of relevance, efficiency, effectiveness, impact and sustainability (1.1).

2.1.4 Spatial planning and externalities

Even though planning objectives are extremely complex, spatial planning has been criticised for not optimally handling its tasks, such as reaching a more conscious and rational use of natural resources, a reduction of socio-economic inequalities and a promotion of sustainable transport infrastructures. This was one of the main themes of the Planning, Law, and Property Rights Conference 'Land as a scarce resource' held in Bern on 17-19 February 2016 (see <www.landgovernance.org/assets/PLPR2016.pdf>). Nowadays, many administrative organisations hardly manage to meet complex challenges also due to a scarcity of resources, which calls into question the efficiency of development patterns oriented towards growth and social inequalities. Solutions to many common critical topics such as sprawl reduction and mixed-use redevelopment are still in a phase of experimentation. However, even in situations where there is economic growth, local stakeholders often have to deal with complex bureaucratic situations and with pre-used plots, with challenging repercussions on the aims of the development patterns as regards the provision of amenities by the urban ecosystem in order to improve people's well-being, also in terms of their QoL. Indeed, poor allocation of amenities can lead to a loss of subjective well-being. Due to global changes and the inefficient reallocation of resources, many urban ecosystems are unable to provide the services which lead us to adapt to those changes. Such adaptations also imply costs which range from concrete payments to sociological events with a potentially heavy psychological impact, as for example being forced to migrate (Grünberger & Omann 2011: 7).

> *Why do people move? What makes them uproot and leave everything they've known for a great unknown beyond the horizon? Why climb this Mount Everest of formalities that make you feel like a beggar? Why enter this jungle of foreignness where everything is new, strange and difficult? The answer is the same the world over: people move in the hope of a better life.* (Martel 2012: 86)

Thus, people move to improve their well-being.

Land markets often have to deal with issues relating to market failure, as Cheshire & Vermeulen (2009: 154) point out, especially when dealing with landowner actions which are not priced or with specialised public goods, like open space, that are hard or impossible to price. Every parcel of land has a specific location and the actions of landowners in the neighbouring plots can strongly affect its value. Since consumers know little about the external costs of land consumption when they take their decisions, the outcome of such decisions might well not be optimal in the free market equilibrium (*ibid.*: 162). In short, if land markets were left unregulated there would be serious problems of market failure. The promotion of economic efficiency by controlling external effects is therefore the classic justification for the regulation of land use in urban areas.

Land use regulations should also aim to improve the attractiveness of communities and the well-being of their inhabitants; however, binding regulations often have additional indirect effects and can cause unplanned inequalities and inefficiencies. These inefficiencies can also lead to a lower standard of living and may have negative side-effects on productivity. Yet, with the growth of land use regulation, the fiscal externalities governing land use might have increased in importance instead of the physical externalities which originally led to the introduction of zoning in the first place (Quigley & Rosenthal 2005: 76). Yet, the "variety of local land use enactments makes it difficult to untangle the link between regulation and its economic effects" (*ibid.*: 72) and planners may not seek enough efficiency in resource allocation. Brueckner (2006: 24) argues that "well-meaning interventions that cause land-use outcomes to diverge substantially from free-market outcomes run the risk of generating net social losses", whereas government interventions intended to steer development "rather than diverting it from a free market path are likely to be socially beneficial" (*ibid.*: 25). Moreover, interventions by governments are useful when the aim is to promote optimal urban development. For Quigley & Rosenthal (2005: 77), for example, zoning is a "mechanism that permits a stable equilibrium in residential patterns and can promote efficiency in the urban region". Since the aim of zoning is to limit negative externalities by distinguishing different land uses it is usually considered beneficial. However, Brueckner (2006: 25) suggests that to "avoid creating artificial scarcities, such zoning laws must respond to market forces in determining the overall allocation of land to residential, commercial and industrial uses". Therefore, land use planning can be considered as a kind of regulation as it determines the use of an economic resource according to specific norms and rules. Indeed, planning decisions can intervene and regulate the influence of prices and markets (Cheshire & Vermeulen 2009: 151). The benefits of land use regulation are evident when it enables market failure to be corrected and the supply of amenities which might otherwise be insufficient to be guaranteed, even though it may restrict the supply of some other valuable goods. Ihlanfeldt (2005: 4), observes that "where land use regulation is more restrictive, there may be less sprawl, a more desirable mix of land uses, and less congestion of public infrastructure".

The dilemma between land use regulations and market freedom lies at the heart of the Swiss planning debate as can be seen in the discussion and debate which dominated the discourse prior to, during and after the 3 March 2013 referendum on spatial planning in Switzerland (see below 4.3 and 4.4.1), which revolved around the issues pinpointed by Ihlanfeldt above. It also lies at the heart of the issue raised by the third hypothesis (1.3) on the importance of exploring the effects of land use regulations in relation to resource allocation and people's well-being.

2.1.5 Performance management

The concept of performance has been defined as "how well or badly you do something" (OLDOAE 2014: 589), which is strongly connected to managerial, technical and institutional control measurement. For example a "company should offer employees a series of incentives to improve performance" and "exam results are used as performance indicators (i.e. things that show how well things are done) for schools" (LDOCE 2003: 1220). Carter et al. (1992: 29) have noted a common belief that the function of performance measurement in public sector organisations is equivalent to that of the profit motive in the private sector, but argue that this is misplaced. For the OECD (2009: 188), "performance is the degree to which an intervention or a partner operates according to specific criteria/standards/guidelines or achieves results in accordance with stated goals or plans". In any case, as Carmona & Sieh (2004) point out, the "fundamentals of performance measurement in planning are by no means well understood, let alone practised, leading to the situation whereby much performance measurement is highly distortionary and can act against the drive to deliver better quality planning". They mention the findings of the United Kingdom House of Commons Public Services Committee, which in 1996 "described the state of performance measurement across the public sector as 'data rich and information poor', in part because the performance of most public services is too complex to measure, and as a result performance measurement is often limited to those aspects that can be measured easily and expediently" (Carmona & Sieh 2004: 8). For Smith (1996) the role of information on outcome performance in the public sector is primarily to inform the political debate. Therefore, one the main reasons for measuring outcomes in the public sector is for policy makers to exercise control across the services under their responsibility, both prospectively and retrospectively, and on which the electorate will assess their performance. Performance information operates at a number of strategic and administrative management levels, which are set within a management hierarchy reflecting the types of decisions being made, for example, as regards the allocation and use of operational resources (Beckford 2002, Carmona & Sieh 2004: 103).

Switzerland has during the last two decades introduced a policy reform process aiming to promote efficiency and competitiveness in performance management (see 2.3.4 below), with repercussions on spatial planning and governance. In chapter five, this study looks at the relations between framework conditions and well-being performance in the Swiss context, focusing specifically on economic, environmental and social performance (in sections 5.1.1, 5.1.2 and 5.1.3).

2.1.6 Speed, transparency and democracy

The concepts of spatial planning and of performance are strongly connected to the speed of decision-making. Indeed, the time taken in the planning decision-making

process is a recurring topic in the debates on planning: as long as there is a planning system there will always be a cost in the time taken to make decisions. Recently, there has been an increasing demand for a faster performance by the local authorities. However, research has argued that the speed of decision-making of the planning processes should not be at the expense of quality outcomes (Carmona & Sieh 2004: 135), since a longer negotiation process could lead to an increase of efficiency and the self-reliance of the population. Furthermore, the more open and democratic a system is, the more it is likely to cause delays (*ibid*.: 130). Therefore, delay might well be the price paid for democracy and for the delivery of a better quality development.

Moreover, in today's rapidly changing and highly interconnected world, smart city initiatives may have the unintended consequence of increasing social disparities among the population by digitally dividing the people, due to unequal access to ICT technology and know-how (Tóth & Reith 2016). This digital divide can also have a major impact on innovation introduced by smart technology which is inaccessible to part of the population and therefore can be considered as not equitable.

Speed, transparency and democracy are key principles underpinning the Swiss system of spatial planning and governance, as pointed out in 2.3.3 below, especially as regards direct democracy and local autonomy. The issues are further discussed and exemplified in chapters four and five, also as regards e-democracy and e-voting (5.3.1.5).

2.1.7 Equity and (in)equality

Spatial planning is an eminently distributive activity (Moroni 2010). Therefore, the concept of equity is crucial in urban studies, territorial governance and spatial planning, since it is connected to the allocation of economic, social and environmental resources (Deakin 1999, Fainstein 2010). However, there is often a lack of equal distribution of the various resources between the local population, creating inequity and leading to social exclusion. Therefore, the concept of equity goes to the heart of spatial planning's task: to reconcile often conflicting interests and to ensure that decisions are made in the wider public interest. This implies that planning processes should be operated in an equitable way, and also that outcomes should deliver the widest possible range of benefits to the full range of stakeholders (Carmona & Sieh 2004: 38). The theory of justice as fairness (Rawls 1971) is underpinned by two principles: the first upholds equality in the assignment of rights and duties; the second sustains that social and economic inequalities are only just and fair if they result in compensating benefits for everyone, and in particular for the least advantaged members of society (Deakin 1999: 1). Moreover, a distinction should be made between the concept of equity and that of equality, where equity is defined situationally and is therefore not synonymous with equality (Meyer 1995: 92-93). In fact, some programmes may

increase inequality to serve equity objectives. Stiglitz et al. (2009: 8) note this with regard to economics and observe that GDP and other similar statistics based on per capita calculations do not always provide an accurate evaluation of the real situation, especially at times of sharp changes in inequality, for example, in income distribution. In such cases, even if the average income is rising, the majority of the population might actually be worse off. This is an opportune warning against the pursuit of economic growth measured by rising GDP without taking into due consideration the importance of such growth being sustainable and bearing future generations in mind (see also 5.3.2).

In today's challenge-solution scenario, equity has a key role in spatial governance and planning. How else can some current issues such as the prevalence of short-termism (so that administrations are perceived to be dealing with issues, by achieving quick results) be appraised? For example, in Ken Loach's 2016 film 'I Daniel Blake' set in Newcastle the protagonist Daniel gets to know and helps Katie, a single mother from London and her two children, who have been encouraged by the social services to move to Newcastle since no suitable accommodation is available for them in the capital. This is mostly due to the high cost of housing as well as to the gentrification process taking place in London and the United Kingdon government's cuts in the social housing. In any case, Newcastle is over 450 km from London, where the lack of affordable accommodation and social housing is leading the local authorities to uproot and relocate disadvantaged families very long distances away from the capital, and so this would seem to be an emblematic example of the absence of social equity in current British spatial planning in the name of finding short-term solutions which satisfy the needs of both developers and politicians. Why shouldn't Katie and her children have been able to stay in London? This is of course an extreme case. It does however draw attention to the centrality of equity in spatial governance and planning and to the role of the State. Mazza (2015: 113), in his outline of the historical relationship between planning and citizenship, observes that "the State is no longer just a tool for guaranteeing property rights and contracts, a means to promote material well-being, but in the State converges and gathers a sense of community and citizenship necessary to develop the moral nature of citizens and promote a good life".

Equity in effective policy-making can also be linked to the 'willingness to pay' approach where people are asked to value and determine how much they would be willing to pay in a certain circumstance. This concept has been identified as an equivalent measure of performance in the public and private sectors. In fact, "if one assumes that all the benefits (and costs) of a product accrue to the consumer, then one might assume that the consumer's willingness to pay for the product is a fair indication of the minimum valuation he or she places on it" (Smith 1996: 3). Therefore, profits, or willingness to pay, can be seen as outcome indicators or indicators of effectiveness, as is customer satisfaction. However, this approach could also have "significant disadvantages, since people

may make different choices or suggest different values when they are actually confronted with decisions for which they have to pay" (Cheshire & Vermeulen 2009: 173).

Hypothesis two (1.3) focuses attention on the importance in spatial planning of insuring that everyone has a suitable living space, and it is particularly interesting to examine whether and how the Swiss system actually deals with the issues of equity and (in)equality. The issues are discussed and exemplified in relation to the Swiss context in chapter five, also in the light of Karl Polanyi's theorisation on the delivery and distribution of amenities in relation to land regulation (see 2.2.4 below).

2.1.8 Spatial planning and sustainability

The concept of sustainability is often defined from the environmental point of view, although it can of course have a significant social and economic impact, as it is considered to be the use of natural products and energy in such a way that it does not harm or damage the environment and life of present and future generations. For example, it is expected that industrialized countries should reduce carbon emissions to ensure global environmental sustainability, since the protection of the environment and the notion of sustainable development continue to be in the forefront of the goals set by the European Union and many countries. Its prominence in the debate could, for example, be seen in the 2015 furore relating to the Volkswagen Company's alleged manipulation of its vehicles' carbon emissions. In any case, each country's population is expected to live sustainably within the earth's resources (OLDOAE 2014: 809).

This sustainable integrated approach has become a shared and popular development paradigm underpinning good practice in various fields and disciplines, including spatial planning. For Carmona & Sieh (2004: 324) sustainable development comes high on the agenda of planning authorities, which consider it a key outcome. Indeed, they suggest that the contribution of planning to the achievement of sustainable development will be the ultimate test of the success or failure of these processes. In fact, a sustainable outcome should be one of the main characteristics of every planning outcome, assuming the necessity to move beyond individual or sector-based outcomes. Yet, because of the broad scale and continually evolving nature of what is held to be sustainable development, its scope is increasingly including aspects from outside the traditional standards of land use spatial planning, or more particularly, from outside planning acting in isolation (*ivi*).

There are various interrelated factors of sustainability which can help a community ensure that its social, economic and environmental systems are well integrated. In fact, a community that aims to pursue sustainability will try to improve its residents' QoL, enhance local economic vitality, promote social integration, enhance the quality of the environment, incorporate disaster resilience

and mitigation into its actions, and use participatory processes when making decisions. In particular, a participatory process will engage all the actors interested in the benefits and the optimal outcome of the decisions and foster a sense of community (<http://www.sustainablemeasures.com/node/42>).

The link between sustainability and spatial planning is important for this study, because Switzerland was criticised in 2008 for not reaching the high requirements of sustainable development. Indeed, this is a key part of the fourth hypothesis (1.3) and this issue will be explored in chapters four and five.

2.2 Well-being and its spatial dimension

2.2.1 Well-being and quality of life

The concepts of well-being and QoL are fuzzy and ambiguous terms because of their intrinsic degree of human subjectivity, which needs to be carefully analysed. According to Grünberger & Omann (2011: 3), QoL is generated in a "circular, dynamic process where strategies are chosen out of the given objective conditions to meet needs, which generates well-being and in the long run human flourishing". The concept of well-being has been defined as a sensation of general wealth and happiness, whereas the concept of QoL tries to quantify and measure how good or bad life is (LDOCE 2003), comparing it to other things like it. Dealing with QoL issues is extremely complex because of the wide range of factors that may have an impact on people's personal QoL and consists of both an objective component (e.g. resources) and a subjective one (e.g. well-being). In particular, as Stiglitz et al. (2009: 11) point out, the current conception of well-being "has to deal with both economic resources, such as income, and with non-economic aspects of people's life (how they feel, what they do and what they can do, and the natural environment they live in)". However, various scholars have published information and data on place quality which are also of great public interest. For example, Rogerson et al. (1989) chose pollution levels, scenic quality access and quality of council housing as indicators to measure and rank QoL in cities across the United Kingdom.

Grünberger & Omann (2011: 2) see the reappearance of the concept of QoL in Europe and the United States in the late twentieth century as probably linked to the increasing evidence that a high QoL is not necessarily guaranteed by material wealth. Indeed, the Report by the Commission on the Measurement of Economic Performance and Social Progress (Stiglitz et al. 2009: 12) declared as its "key message and unifying theme" that "it is time for our measurement system to shift the emphasis from measuring economic production to measuring people's well-being", which should be put in a "context of sustainability". Because there seems to be an increasingly net distinction between the information provided in aggregate GDP data and what is considered to be the well-being of common

people, this focus on the role of well-being is worth noting. Indeed, the interconnectedness of well-being and sustainability and the need for the two to be aligned in policy-making has played a key role in the United Nations discourse on sustainability since the 1980s.

This position is highly relevant to the present research, also because Stiglitz et al. then make a number of recommendations as to how policy makers should proceed in the endeavour. It "means working towards the development of a statistical system that complements measures of market activity by measures centred on people's well-being and by measures that capture sustainability. Such a system must of necessity be plural – because no single measure can summarize something as complex as the well-being of the members of society, our system of measurement must encompass a range of different measures. [...] Such a system should not just measure average levels of well-being within a given community, and how they change over time, but also document the diversity of people's experiences and the linkages across various dimensions of people's life. There are several dimensions to well-being but a good place to start is the measurement of material well-being or living standards" (Stiglitz et al. 2009: 12).

In a pertinent study on happiness, economy and institutions focusing on the Swiss context, Frey & Stutzer (2000: 3-5) have defined three main sets of sources of individual well-being, which are: personality and demographic factors; micro and macro economic factors; and institutional or constitutional conditions. This research is referred to more specifically in section 2.3.6 in order to look at the effects of institutions on citizens' happiness in Switzerland. Moreover, an overview of well-being in Switzerland is provided in 2.3.5, and discussed in more depth in chapter five (5.1.4).

2.2.2 Quality of life capital

Carmona and Sieh (2004: 372) take the view that QoL, combined with the notion of capital, may be dealt with in a more holistic way, identifying the consequences of plans and of development proposals. Originally the concept of QoL capital was a tool for measuring environmental capital, but now it has expanded to embrace the concept of social and economic capital as well, creating a shared framework with all kinds of economic, environmental and social factors. This concept is well represented in the well-known sustainable development model in figure 1, which shows that interrelating and integrating these three types of QoL capital, may bring benefits for human life.

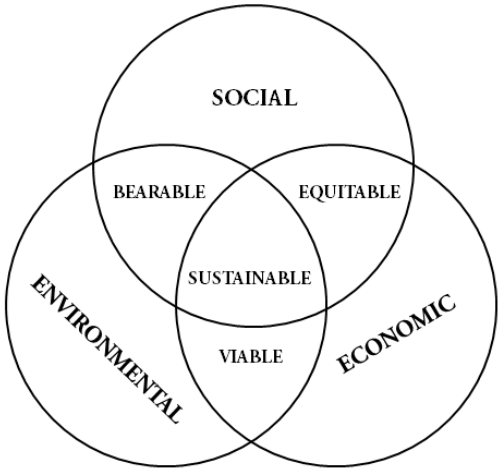


Figure 1: Sustainable development model (adapted from Adams 2006)

Spatial planning has already started to apply this integrated approach, promoting sustainable development goals and objectives. Environmental impact assessment (EIA) procedures are a good example because they represent a well-developed assessment technique that covers a relatively comprehensive set of environmental, social and economic concerns. Therefore, they provide a possible template on which to base the assessment of overall planning outcomes. However, the guidelines of the procedure are not detailed, and data collection is dependent on highly specialised expertise such as that of ecologists and hydrologists. Furthermore, EIA procedures are still geared towards the impact of development on the natural rather than the built environment (Carmona & Sieh 2004: 368).

These three analytical dimensions (economic, environmental, social) are used throughout the study in order to focus on the efficiency and sustainability of the Swiss spatial governance and planning system (1.2). They therefore link the five hypotheses the research aims to verify in order to study the connection between spatial planning systems and well-being. In chapter five they provide the analytical structure for the discussion and assessment of the Swiss context.

2.2.3 Sustainability and well-being

A multidimensional approach to QoL is compatible with the normative premises of sustainable development (Schäfer et al. 2004: 4). So far, the concepts of QoL and of sustainability have mostly been treated separately from each other, even though they share many common features (*ibid.*: 1), such as dealing with existing and desirable living conditions of human beings. In fact, the concept of sustainability is strongly related to the concept of the QoL of a population: of whether the "economic, social and environmental systems that make up the community are providing a healthy, productive, meaningful life for all community residents, present and future" (Hart 2000). Therefore, by exploiting the natural

environment and using the existing resources unsustainably, people are directly affecting their well-being (Grünberger & Omann 2011: 1). However, while the concept of QoL concentrates on the present well-being of people, sustainable development also focuses on the future generations. The 2009 Report by the Commission on the Measurement of Economic Performance and Social Progress has made an important distinction between the assessment of current well-being and that of sustainability, and whether this can last over time. In fact, "whether these levels of well-being can be sustained over time depends on whether stocks of capital that matter for our lives (natural, physical, human, social) are passed on to future generations" (Stiglitz et al. 2009: 11). According to Mulligan (2008), sustainability becomes much more tangible and relevant when we start talking about QoL or well-being, which "involves looking at sustainability through the lens of our everyday activities, considering things like transportation, food and eating, spending time with our family, achieving a sense of community, having time to think or fresh air to breathe". Even though not all people and cultures value QoL in the same way, some of the basic issues taken into consideration when determining QoL include the presence of environmental pollution, the quality of housing and the levels of employment. However, it is "not possible in many cases to determine whether there are interactions between certain rules of sustainability and of quality of life dimensions, as this largely depends on the way in which certain objectives are achieved" (Schäfer et al. 2004: 7). People's lifestyle and personal norms also play an important role and, as Grünberger and Omann (2011: 2) argue, adopting a sustainable behaviour not only reduces negative effects on the natural environment but may lead to an increased subjective well-being. Consumption patterns may also directly affect people if they become part of the "treadmill of wanting more and comparing with others" (*ibid.*: 6), buying as many material goods as possible rather than concentrating on basic goods and the importance of immaterial values, such as art and culture.

Moreover, resource efficiency is also linked to resilience, so that development patterns should have the capacity to adapt over the years to changing technologies, social transitions, and to swings in the economic cycle and associated employment (Carmona & Sieh 2004: 42-43). Thus, the overall policy framework should reflect a long-term orientation period, supporting new entrepreneurial activities with appropriate and sustainable policies.

The second hypothesis (1.3) focuses on the importance of involving all of the stakeholders in order to achieve a high level of sustainable development and to improve the well-being of all the citizens, increasing their awareness and sense of responsibility. This is particularly pertinent to the Swiss context. Indeed, as will be seen in 2.3.3, direct democracy, civic engagement and local autonomy are three of the pillars on which the Swiss traditions and system of territorial governance are based. In chapters four and five, a critical assessment of the actual efficacy of Swiss democracy is made.

2.2.4 Well-being and spatial planning

A recent study carried out by Brown et al. (2015) assumes that city scale, urban morphology and land use systems play a role in determining well-being and investigates the effect of the urban structure on life satisfaction looking at key indicators in France, Japan, the Netherlands, Spain and Sweden. The econometric analysis (discussed in OECD 2014: 70) suggests that population density in the overall urban area positively affects life satisfaction on average, but that some associated aspects of population density, such as the increasing density of roads and a greater diversification of land use, have ambiguous and sometimes negative impacts on life satisfaction. Yet, overall, the analysis suggests the potential of integrating spatial data on urban structure and characteristics with survey data on life satisfaction and, more generally, the appraisal of local environmental outcomes (*ibid.*: 71). Therefore, effective measurements on local well-being can be relevant for policy-making.

Moreover, although people's well-being strongly depends on the amenities provided by the urban ecosystem (2.1.4), which should allocate resources optimally and improve people's standard of living, Polanyi (2001 [1944]), whose theorising is considered increasingly pertinent as regards the relationship between property rights and land use regulations (indeed, this was the theme of the Property in the City Workshop held at the Allard School of Law at the University of British Columbia on 3-4 March 2017), argues that self-regulating markets never work and that government interventions become necessary in order to improve efficiency in resource allocation (Stiglitz 2001, Block 2001). Land use regulations, which are embedded in their institutional structure and role of law, aim to provide and regulate amenities that make communities more attractive and increase the QoL of their inhabitants, and have a direct effect on the assignment and reassignment of property rights in the urban ecosystem. There is, therefore, a connection between the performance of a planning system and the standard of living of a country, especially in relation to the way spatial development rights are established. Moreover, if the question is posed of whether one of the principal roles of land use regulation is to forestall Polanyi's notion of the grave and deleterious consequences of subjecting land to the self-regulating market, thus dis-embedding it from other social forces, it is important to emphasise the close link between the planning system and the government system in the promotion of well-being. Therefore, spatial planning and land use regulations can be seen as means in order to reach a higher well-being.

Another aspect of the connection between spatial planning and well-being is related to the people's choice of where to live (of course, only if they are free to choose), thus location can become play a significant role in people's QoL. Such choices can depend on a variety of factors: proximity to family, proximity to place of work, attractiveness of the environment, availability of public transport, cultural amenities, educational facilities and so on. These factors are not static.

For example, with the transition in today's globalised world towards a knowledge-based economy primarily based on research and development, a number of location factors that from an economic point of view were formerly held to be soft are now considered to be hard. Indeed, in these times of change, the old industrial countries place a premium on workers who are young and highly qualified. In this regard, Scholl (2008: 9) notes that, "Increasingly, these kinds of workers choose their location and their environment according to their standards for a good quality of life. In addition to education, culture and good health, quality of life now carries a special, and growing, emphasis on the quality of the spatial environment." These issues are discussed at length in chapter five in relation to local well-being (5.1.4.3) and also as regards the NRP in 5.3.3.1. In any case, it is worth bearing in mind that problems might exist even in local realities that from the outside might seem to offer the best living conditions in the world, such as the City of Zurich (Keiner et al. 2004).

This connection between the efficient performance of a planning system and the well-being of a country, also in relation to the way property rights and land use regulation are established and maintained, is a fundamental focus of this study and also the topic of the first hypothesis (1.3).

2.3 The context of Switzerland

2.3.1 A case suitable for a place-based survey

This research takes a place-based approach in order to analyse the hypotheses set out in chapter one (1.3), focusing on the context of a single country (also its relations with its neighbours), by making a survey of the Swiss case so as to understand better the connections between spatial planning and well-being.

A place-based approach emphasizes the distinctive characteristics and circumstances of places as a fundamental starting point for spatial planning and implies their integration into broader policy-making and evaluation practice. It respects the different geographical, historical, legal, administrative, socio-economic and cultural contexts in which spatial planning systems are embedded (Nadin & Stead 2008a). The emphasis is therefore territorial, with a specific focus on the place, area, space in which the planning and policy-making takes place. Pinson (2008: 43) hypothesises a link between effective sectoral policies and a spatial approach. Indeed, she considers space to be an active agent of public interventions because of its specific economic, environmental and social features. A place-based approach is also proactive, involving local stakeholders, actors and partnerships in the coordination of spatial planning and development.

Building on EU territorial development evidence, place-based spatial planning is a cornerstone of current European Cohesion Policy and was introduced into European policy-making and strategy by the Barca Report, which

emphasized the potential usefulness of a place-based approach to development policy in the EU (Barca 2009). A further implication of place-based spatial planning is its connection with improving the well-being and the QoL of citizens. For, even though QoL might be influenced by different contextual and cultural factors in different settings, it is generally determined by taking into consideration factors such as the presence of environmental pollution, the quality of housing and the levels of employment. Moreover, as regards urban and rural development, Joyner (2012: 61) observes that if it is managed effectively with behavioural change and adaptation of existing places, it will support a better standard of well-being, which will contribute to economic growth.

As seen in chapter one (1.1), Switzerland performs very well in international QoL and well-being surveys, such as the OECD Better Life Index. It is an interesting country to study also because of its strong territorial, cultural, economic and linguistic fragmentation, as will be seen in sections 3.1 and 4.2. In fact, Switzerland is not a nation based on a common cultural or linguistic identity and these divisions can be observed in the cantons. These are among the main reasons why the country has been chosen to analyse the relationship between spatial planning and well-being. Indeed, the adoption of a place-based perspective can also shed light on the local factors (e.g. housing, transport, employment), which shape and embed people's well-being. Some of these factors, such as those identified by the OECD, are further investigated in chapter five (see 5.1.4) at the national, cantonal and local level.

2.3.2 Spatial planning in Switzerland

The spatial governance and planning system in the Swiss Confederation is determined by the country's history and geography, by its economic, linguistic and cultural features. It is a federal state divided into three main levels of government, each involved in planning: the national or confederation level, the twenty-six cantons, and the communes. Article 75 of the Federal Constitution (18 April 1999) and the Federal Law of Spatial Planning (22 June 1979) are the legal structure of the territorial development of the country. The federal government is expected to coordinate its own activities and the planning at the cantonal level.

The cantons have considerable powers to promote and coordinate spatial planning in relation to the federal law principles. They are held to be the central instrument of spatial coordination in Switzerland (Newman & Thornley 1996: 63) and are responsible for the actual 'creation' of spatial planning (Muggli 2004: 4). Important instruments at this level are sectorial strategies and plans, and, according to the federal constitution, the cantons formulate their own planning and building laws and produce cantonal 'guiding' or 'structure plans' (4.3.2.). Within the federal guidelines each canton has pursued its own legislation according to its particular circumstances (e.g. topography, resources). Its plans are binding on authorities at all levels and are approved by the Federal Council.

Moreover, Swiss cantons have a highly developed municipal federalism and most of them delegate land use plans to the local level (communes) because of their requisite knowledge of land use planning. A fundamental legal issue is the distinction between building zones and non-building areas. The "canton gives directives to the communes and approves their plans. The communes regulate development through the zoning plan, which has to cover the whole area, and through building regulations. The zoning plan sets out the permitted use of all land and is binding on landowners" (Newman & Thornley 1996: 63).

As pointed out previously (in section 1.1), the Swiss Confederation delegates a large number of competences to its federal states (cantons) and communes and, undoubtedly, the delegation of so many competences creates a broadly felt sense of responsibility and self-reliance among the population. Some scholars would also argue that local solutions tailored to the needs of the population are more cost-effective and fit better than standardised solutions imposed by a far away central government.

The country has a high standard of living and a highly developed economy which creates considerable pressure on land use given the limited area suitable for settlement (around 13,000 km^2) (Muggli 2004: 2). In particular, great importance is placed on environmental and landscape protection and even agriculture is dependent on the concept of unspoilt environment. Switzerland is typically associated with beautiful untouched landscapes, with scenic mountains and lakes, yet, as will be seen, the country faces some serious land planning issues. In fact, because of Switzerland's geographical landscape there is considerable pressure on land use, which is also predicted by the forecast growth of population and infrastructures. There are serious challenges related to the changing nature of the rural communities and some poorly managed urban development, including urban sprawl (Scholl 2008). Indeed, in its Sustainable Development Strategy 2016-2019 the Swiss Federal Council (2016: 18) declares that:

> *Switzerland has progressively been losing good agricultural land for decades now, and the quality of the landscape remains under considerable pressure owing to fragmentation and urban sprawl. This impacts negatively on biodiversity, the capacity of natural resources to renew themselves, on quality of life, and on opportunities for recreation, leisure activities and tourism. The loss of agricultural land also reduces the area available for land-dependent food production. Greater efforts must be made to use land economically and to guide urban development even more strictly inwards. Inward development should be conceived in a way which preserves or increases the appeal of urban areas, while offering a suitable framework of open spaces and infrastructures to meet residents' needs. Furthermore, spatial planning must factor in the risks posed by natural and other relevant hazards, and take opportunities to create resilient settlements and infrastructures.*

These land use challenges are therefore still very evident and how the country is facing them, and with what success (a central focus of hypothesis four, 1.3), is looked at in chapters four and five.

2.3.3 Direct democracy and local autonomy

In Switzerland, the concept of national interest cannot be separated from that of popular will (Koh & Guo 2014), devolving decision-making and rising bottom up through local communities and the cantons. In fact, any law voted by the federal Parliament may be challenged by citizens through referendums supported by 50,000 citizens and amendments can be made to the federal Constitution through federal popular initiatives supported by 100,000 voters. As a current example relevant to planning, people in the canton of Zurich recently voted for the 'cultural land initiative' (*Kulturlandinitiative*), which aimed to protect agricultural land and, as a consequence, forbids any construction activity on land with a certain degree of agricultural quality that was not in the building zone of the local land use plans at the time (Loepfe & Wezemael 2015: 87).

Swiss citizens are directly informed on the proposed changes in the law, allowing the voters to weigh the different policy options and shape a good opinion on the issues. For example, in 2013, eleven referendums were held on a variety of issues, including spatial planning. Moreover, in Switzerland there is a strong local autonomy and democracy: every village, town or city has an assembly where citizens can present proposals which are then voted on. Local decisions, including minor planning proposals, are decided by the local community assembly. The local assembly is an institutionalized forum of direct participation with a long history and is a key decision-making institution (Schroth 2010: 29). Article 4 of the Swiss national law for spatial planning (see 4.2.2.2) defines that federal, cantonal and local authorities have to provide opportunities for public involvement when adopting planning strategies. So, Switzerland has a strong tradition of direct participation on all levels. Moreover, planning laws include not only formal regulations for public involvement but also encourage informal ways of collaboration. However, in some cases the quality of the processes has to be improved (e.g rural landscape development) and the tools enhanced (*ivi*). Indeed, as Koh & Guo (2014) argue, there are downsides to the Swiss method of governing by plebiscite, such as creating unpredictability in policy-making, weakening legal and political institutions and not protecting the rights of minorities, which raises equity concerns since Switzerland has a high percentage of foreign inhabitants (e.g. 42.1% in Canton Geneva in 2016).

Loepfe & Wezemael (2015: 86) observed several strategies to avoid a specific public debate by orienting the topics of public debates deliberately around technical issues with which the participating citizens do not feel familiar, such as flood protection, modelling traffic flows, or the trick to avoid assessment of credits through community legislative procedures by splitting the financing in

order to be below the limit that demands a mandatory referendum. Furthermore, they observed (*ivi*) that consensual strategies to formulate common goals and measures in strategic planning sometimes lead to the exclusion of dissident voices, and often lead to vague definitions of the planning instrument's content. So, consensual strategies in Switzerland could open up the space for people and new ideas, but fundamentally different ideas that cannot be translated into formal planning instruments and that often follow informal processes are getting lost through the process (*ibid.*: 87). In any case, as Frey and Stutzer (2000: 15) observe, federal structures are strengthened by direct democracy at the national and state level since citizens, unlike politicians, are interested in robust federalism; while in a decentralised system, it is the people bearing the costs and benefits of government action who are more easily identifiable. Overall, Swiss federalism and direct democracy strongly influence local practices, as will be seen in 5.3.3.1.

2.3.4 Swiss efficiency

> *Swiss society has long had a reputation for running as efficiently as the clockwork it produces – its 19 billion Swiss franc watch and clock industry dates back to the 1500s. Time and time again, travellers to Switzerland report back that Swiss efficiency truly does exist. But what exactly does it mean for a country to be efficient? And does Switzerland's obsession with time really help its public and private institutions run more effectively?* (Sood 2012)

This issue can also be looked at in terms of land use management, one of the central themes of this study. As will be seen in chapter four (4.2.2.1), the Federal Law on Spatial Planning (RPG) in 1979 required the cantons to better regulate settlement developments, since there had been a poorly managed urban development in the past. Nevertheless, most of the cantons did not really implement the proposed measures; as a result serious challenges remained related to the changing nature of the rural communities. Indeed, the scarcity of land, the increase of urban sprawl and the rise of real estate prices were major challenges and the topic of considerable debate. Therefore, in the 1990s, the aim of regional policy in Switzerland moved away from the redistribution of resources towards a new focus on efficiency and competitiveness.

This shift was formalised in 2008 with the introduction of the New Regional Policy (*Neue Regionalpolitik*, NRP) which encouraged "an endogenous 'growth oriented' approach emphasising open markets, export capacity and competitiveness" (OECD 2011: 62). It was also in some respects an attempt to redefine the objectives of regional policy which had been criticised in 2002 by the OECD (2002: 117) "policy tools have remained largely the same, and regional policy has become even more opaque". In any case, the NRP is an example of a

reform process currently under way in many OECD countries where, the "shift from top-down sectoral subsidies towards bottom-up integrated cross-sectoral investment represents a complex agenda that can take various forms" (OECD 2011: 62).

It would therefore seem that current efficiency in Swiss public land use management is due among other factors to its ability to introduce reforms where they are needed. Indeed, in 2002, the OECD made the following recommendations on Swiss spatial planning policy. Since Switzerland gives high value to the preservation of non-built zones, an efficient use and management of land should be fostered by federal spatial development policy. According to the OECD (2002: 117), the overall aim of "spatial strategy should be to reduce the external cost of land use: economic activities should be concentrated on land that is already built and transformed, and planning tools should be adapted accordingly". Spatial planning and transport policy should be better coordinated, favouring concentrated settlement structures. The federation "should thus help cantons to develop a more coherent spatial structure across their territories" (*ivi*), enhancing a stronger horizontal coordination and reducing political fragmentation. For the OECD, a good example of how a future Swiss regional policy could be shaped is the kind of federal action being delivered under the country's RegioPlus project, which emphasises horizontal collaboration among jurisdictions (*ivi*). However, because many regional policies "are still framed in the spirit of traditional regional assistance rather than an innovative support of regional competitiveness", the OECD argues that a "resolute shift of strategic policy objectives and tools should be followed if regional policy is to be distinct from sectoral policies and from financial and fiscal mechanisms" (*ibid.*: 102).

The NRP has attempted to improve the efficiency of the country's land use management, as is discussed more in depth in chapter five (5.3.1.1). Another attempt to face the counry's land use challenges led to the referendum of 3 March 2013 and the subsequent reform of the RPG (see 4.3) which is addressing the challenges by promoting the densification of the existing construction zones and focusing on the need for a more efficient management of land use. For example, the cantons and the municipalities, which have used too much land for building in the past, are now required to reduce construction areas. Yet, the country's limited suitable area for settlement is leading to a strong increase in land pressure, which is also predicted by the forecast growth of population and infrastructures (2.3.2), so the country's efficiency as regards land use is still facing issues that will test both its resilience and its ability to provide solutions such as the NRP, while maintaining the delicate equilibrium on which its spatial governance and planning system is based.

2.3.5 Well-being in Switzerland

As mentioned in the introduction (section 1.1), Switzerland's organisational and administrative efficiency is widely recognised and the country has high-level indicators of QoL and of well-being. Indeed, as will be seen (5.1.4), Switzerland performs much better in terms of well-being than most other countries in the OECD Better Life Index. In fact, in the 2016 Index its ranking is above the average in subjective well-being, jobs and earnings income and wealth, health status, social connections, environmental quality, education and skills, and personal security, but surprisingly the country ranks below average in civic engagement, which is an aspect that it could be interesting to investigate better, given the country's major use of referendums and its long tradition of direct democracy (2.3.3). This aspect is further discussed in chapters four and five (see especially 5.1.4.1 and 5.1.4.2 with tables 31 and 32).

2.3.6 Effects of the institutions on happiness

The impact of democratic and federal institutions on people's well-being has often been referred to, but little analysed. In fact, it is hard to identify the effect of specific institutions on individual well-being, also in a comparative analysis, because countries are very different in a large number of aspects. However, this problematic issue is arguably less relevant for institutional variations within a federal country. The choice of a cross-regional analysis is also suited to the federal structure of Switzerland, where major competences are the responsibility of the cantonal level. Frey & Stutzer's 2000 analysis seems to be the first paper which uses cross-regional variations in a study of happiness, using interview data provided by more than 6,000 Swiss residents, and forms the main reference point for this section. In their research, Frey & Stutzer (2000: 2) demonstrate that institutional conditions linked to the form and the extent of democracy make a considerable and systematic impact on individual well-being, besides economic and demographic factors. They show that individuals are happier when the institutions of direct democracy are better developed in the area where they live and when there is a strong local autonomy. Interestingly, although unemployment predictably has a significant negative impact on citizens' perceptions of happiness, an improved level of income only has a slight positive impact. Frey & Stutzer identify two principal reasons to explain the connection between a greater degree of possible direct political participation, or better developed institutions of direct democracy (such as referendums), and the improvement in the subjective well-being of citizens. First, because citizens take a more active role in the decision-making mechanisms, they can control and monitor politicians more effectively. Consequently, the citizens' satisfaction with a government's achievements is demonstrated in an improved sense of well-being. Second, citizens' possibilities to become involved in the political process are increased by direct democracy (*ibid.*: 6). Local autonomy would also seem to have a positive

effect on citizens' well-being, since municipalities have greater access to important information regarding the preferences of their residents, but can also be controlled more directly by their citizens (*ibid.*: 7).

Frey & Stutzer try to find various reasons for the differences in happiness perceptions between regions, taking into consideration two macroeconomic variables (the total tax burden and national income per capita), together with two language variables (they study a French speaking canton and an Italian speaking one). However, the two macroeconomic variables do not seem to make a significant impact on direct democracy, whereas the authors correlate language variables significantly with the citizens' perceptions of their well-being: "living in a French speaking canton means significantly lower happiness, whereas living in the Italian speaking canton Ticino means significantly higher reported subjective well-being. However, the lower well-being in the French speaking cantons can to a large extent be explained by weaker direct democratic rights" (*ibid.*: 18).

In order to analyse the key issue of equality and whether direct democracy might have a positive impact only on some privileged groups, Frey & Stutzer have also analysed the effects of direct democracy on groups of people who have a number of characteristics in common, such as gender, employment status, income and education (*ibid.*: 19). Their results show that direct democracy does not appear to be used in order to discriminate against certain groups within society and the benefits seem to be distributed fairly evenly across the various social classes. However, a large number of residents are formally excluded from participation in the direct democratic process, namely foreigners, "who benefit less than Swiss citizens in cantons in which the institutions of direct democracy are well developed" (*ibid.*: 21). Frey and Stutzer also question whether those who are happy choose to have institutions of direct democracy, pointing out that historical evidence "suggests that the democratic institutions are not simply the result of happy and satisfied citizens. Especially during the last decades, institutional conditions in Swiss cantons have been quite stable, which suggests that causality runs unambiguously from direct democratic rights to satisfaction with life" (*ibid.*: 14).

2.3.7 Switzerland and the European dimension

Although the European dimension is not the main focus of the research, it cannot be ignored given Switzerland's geopolitical collocation at the heart of Europe. Switzerland is a European country which for historical and other reasons is often treated differently in the literature from the other European countries, partly because it is not a member of the European Union (EU), and partly because of its division into highly independent cantons, with considerable cultural and linguistic diversity. It is useful to remember that Switzerland was not invited to take part in the ESPON (European Spatial Planning Observation Network) programme until 2002, after the common goals and specific projects had already been defined and

therefore the country had no influence on the programme structure. Swiss research institutes were not taken into consideration for projects until the later rounds, and only as 'external partners' (Keiner 2005: 3).

Nevertheless, as the Swiss Federal Office for Spatial Development (ARE) points out, it is essential for a small country such as Switzerland, whose infrastructure and cantons are closely bound up with those of its European neighbours, to maintain a close dialogue with partners outside its borders. The ARE, on its website (<www.are.admin.ch>), declares its intention to pursue the following goals: "we want to contribute actively to European spatial planning; we are seeking to integrate our urban system into that of the rest of Europe; and we are striving for the closest possible cooperation among Europe's rural and Alpine regions".

There seems to be a paradox between Switzerland's choice to remain outside the EU and its declared intention to contribute actively to European spatial planning, in the light of current and future changes which might affect and influence the country. Indeed, as Scholl (2008: 32) states, Switzerland cannot ignore spatial planning initiatives of the EU Member States and will "increasingly have to play a part in influencing the spatial development of transfrontier regions".

However, as will be seen in chapter five (5.3.1.2) and six (6.2.4) although the country is outside direct implementation of EU Cohesion Policy, it does in actual fact make a substantial independent contribution to EU Cohesion Policy.

2.3.7.1 EU Cohesion Policy 2014-2020 and place-based innovation

Current Cohesion Policy provides a valuable multi-disciplinary framework set up to increase Europe's economic growth and social cohesion and, at the same time, to reduce disparities among Member States, regions and cities. The aim of the Smart Specialisation strategy platform, which plays an innovative and creative role in current Cohesion Policy, is to enable European regions to increase their local cultural and economic potential by focusing on their specific strongpoints. Yet, development is only considered smart if it is sustainable and Smart Specialisation also emphasises the importance of energy efficiency and eco-innovation. Moreover, new organisational forms of aggregation must come into being in order to cope with the rapidly changing social challenges of today. Some European case studies have already been made on smart specialisation, such as nanotech for health in Flanders and the Andalusian aerospace cluster (<http://s3platform.jrc.ec.europa.eu/s3-platform-registered-regions>).

EU Cohesion Policy has a place-based logic (see section 2.3.1), because the interactions between development and innovation are particular to the local contexts. Therefore, smart growth and development take place in quite different ways in the various types of regions. The concept of smart specialization was

introduced by Foray et al. (2009) and "implies that regions are able to identify, through an entrepreneurial process, the areas where they can better innovate and build up international comparative advantages" (Barca & McCann 2011b: 2). However, this is "likely to take different forms depending on whether the region is already included in the worldwide circulation of knowledge (knowledge hub), or rather has an established industrial base and/or a lagging productive sector" (*ivi*). For a more detailed discussion from a policy viewpoint on measuring the performance of Cohesion Policy in terms of effectiveness and well-being, see Solly (2016a).

2.3.7.2 Cohesion Policy performance, effectiveness and well-being

For Barca & McCann (2011a: 1) "the current shift of focus from actions and financial means to their outcomes in terms of people's well-being through suitable indicators may contribute to policy effectiveness and to outline the agenda for budget decisions". Various countries have already made a certain amount progress in this regard, with the OECD making an important contribution in promoting the current debate. In addition, the 2009 Report by the Commission on the Measurement of Economic Performance and Social Progress has studied how well-being indicators can accompany improved national account statistics and thus can be used in policy design and management (Stiglitz et al. 2009), also exploring various methodological issues and raising the general public's awareness. There have been a number of attempts in order to focus EU Cohesion Policy on performance, even though there are various methodological difficulties regarding the distinction between input/output and results/outcomes. However, Barca & McCann (2011a: 2) observe that the emphasis on the implementation of programmes "is still more linked to policy actions rather than performance [and] so far, reporting on projects and programmes has been inadequate; [in fact] it has not yet provided the public institutions with sufficient information on progress towards results expressed in terms of the well-being of citizens".

People's perceptions are also important. Recent research for example shows that there are big differences between EU regions in the perception of quality of public services, impartiality and personal experience of corruption of local governments, which could help explain differences in well-being between EU regions (Charron et al. 2014).

2.3.7.3 Cohesion Policy outcomes, indicators and targets

Marlier et al. (2007: 41), suggest that concentrating on the outcomes demonstrates that the Member States are being encouraged to carry out their interventions in relation to impact outcomes which are planned and desired. In particular, as Barca & McCann (2011a: 1) state, the starting point for a results/outcome-oriented approach is the "ex-ante setting of clear and measurable targets and outcome indicators", which must be "clearly interpretable, statistically validated, truly

responsive and directly linked to policy intervention, and promptly collected and publicised". From this point of view, therefore (Solly 2016a: 196), "EU Cohesion Policy should be more result/outcome-oriented and be able to focus on the outcomes. The planned outcome is the well-being of people, such as to improve mobility and transport infrastructures and sustainable living spaces". Indeed, as Barca & McCann (*ibid.*: 6) argue, outcome indicators ought to be "reasonable, normative, robust, responsive to policy, feasible and debatable". As will be explained in the following chapters, the selection of suitable indicators, although it is a difficult task, can enable researchers to 'capture' the connections between spatial planning and governance and people's well-being, one of the main goals of this research.

In today's fast changing world, the objective of EU Cohesion Policy is to give rise to a smart, sustainable and inclusive economy, by supporting the Member States to achieve high levels of productivity, innovation, and of social cohesion. Yet, it is not easy to set a regional smart specialization process in motion, because it must be localised in a specific territory which will have its own particular identity and features. Nevertheless, there have been a number of attempts to select and set in motion various innovation measures, for example by the EU Commission or by the OECD. These usually pay special attention to knowledge hubs, industrial production zones and peripheral regions. European Structural Investment Funds (ESIF) would also seem to be targeted more effectively, enhancing more synergies between different regional, national and EU policies, together with an increase in public and private investments. Another aim is to improve multi-level governance and to involve many different stakeholders together, under a shared long-term vision, to develop, implement and monitor smart specialisation strategies. Moreover, within this interactive and regional-driven process, the EU Cohesion Policy aims to create social capital. The EU Cohesion Policy 2014-2020 proposes the use of well-being metrics in order to evaluate and map living standards disparities in the Member States and to promote convergence in order to reduce poverty, inequity and social exclusion. Indeed, in the light of changing conceptions of urbanization and governance, it seems useful to identify and provide solutions to shared cross-border problems, such as those connected to the environment and risk prevention; cooperating on these issues and coordinating projects and research together is likely to prove beneficial for those on both sides of the border. In this regard, see for example Gillet et al. 2007 on natural risk in land use planning policies in Italy (Aosta Valley), in Switzerland (Canton Valais) and France (Rhône-Alpes and Provence-Alpes-Côte d'Azur).

There can be no doubt that there is considerable interest in the Swiss spatial governance and planning community in what is taking place at the EU level. As will be seen in chapters four (4.4.2), five (5.3.1.2) and six (6.2.4) a certain amount of common action already exists or is underway. This is particularly relevant as regards cross-border issues where the need to find the right solutions and agreements is especially pressing.

Chapter 3

Methodology

This chapter presents the methodological approach adopted by the thesis to focus on the research questions and hypotheses set out in chapter one (1.1 and 1.3), in order to explore and analyse the connections between a spatial governance and planning system and well-being in a place-based survey. The first part of the chapter outlines and describes the conceptual framework and the adopted model for understanding the planning system, explaining why it has been chosen and how it functions (3.1 and 3.2). The chapter then presents data, sources and indicators which are methodologically useful to consult and refer to so as to focus on the three main dimensions (economic, environmental and social) of well-being in general (3.3). Then, in order to frame and understand the survey of Switzerland, and also to identify the factors that influence this domestic planning system, the main sources of data and information used for the analysis of the Swiss system, as well as the country's well-being and QoL, are set out (3.4). The final section (3.5) looks at the criteria for measuring and evaluating spatial planning's contribution and the development of a measurement framework. It also takes into consideration some of the methodological challenges of this kind of research. Overall, the aim of the chapter is to set the scene for the presentation of the Swiss spatial planning and governance system in chapter four and its evaluation in chapter five.

3.1 Conceptual framework

The aim of this study, as seen in the first hypothesis (1.3), is to deepen the knowledge of the relationship between spatial governance and planning and well-being. To achieve this, the study will analyse the performance of a spatial governance and planning system as a whole, thus including all the stakeholders, as set out in the second hypothesis, rather than limiting the focus, for example, to the analysis of the effects of a single planning process. Further, through delineating

and analysing a spatial governance and planning system the study aims to shed light on its socioeconomic effects even though they may be difficult to untangle (hypothesis three).

The analytical framework should therefore allow a systematic analysis of the interactions between certain features of a planning system and of some dimensions of well-being, which could be possibily applied in other contexts. In order to look more closely at spatial governance and planning in a daily life perspective, the research will take a place-based approach focusing on the Swiss case (2.3.1). The choice of Switzerland as the system to analyse is due to the suitability of the country's spatial governance and planning system for this kind of scrutiny (hypothesis four). In fact, as will be seen, as well as having a high QoL, the country also has excellent data which is available for analysis (see 3.3 and 3.4). Yet at the same time it has interesting characteristics, such as its complexity and variety, for example as regards issues linked to its potential for fragmentation. In fact, in Switzerland there is a strong territorial fragmentation (2.3.1, 4.2), which has led to significant differences in cultural values and behaviours in the different cantons, where building and planning laws might differ greatly. Since the research also aims to deal with the complexity of the reality being studied, the analytical framework will explore some relevant spatial planning issues at a place-based level, in order to create a basis for developing a set of indicators and identifying the main criteria for the empirical analysis.

This leads to the key issue posed by hypothesis four of the correlations that the analysis of the performance outcomes can reveal about the relationship between Swiss spatial governance and planning and well-being in that context, such as the current status of sustainable development. Analysing well-being in this way can help define the links between the spatial planning system and the well-being of the context. Hypothesis five focuses on the validity of the methodological tools, indicators and evaluation criteria chosen for such an analysis. In any case, the five OECD indicators (1.1, 3.5.2), for example, can reveal correlations and interconnections between the planning system and well-being, and thus their analysis can prove a useful way of understanding this interface. In principle, combining the basic requirements for optimal and sustainable development with the positive benefits for a good life should help to achieve a deeper understanding of development patterns and to find ways to design more efficient spatial planning.

This kind of multidimensional analysis may include the collection of both quantitative and qualitative, as well as objective and subjective, indicators and criteria, combining the analysis from a macro perspective (e.g. international and national) with the analysis from a micro perspective (e.g. local and regional). In fact, some of the qualities mentioned in the concepts of wealth and QoL can be described by objective criteria, others by subjective attitudes (e.g. quality of existing cultural or educational facilities, Schäfer et al. 2004). Therefore, the

analysis is structured in order to examine the efficiency of a spatial planning system and the dimensions of well-being, taking into consideration: the analysis of the problematic issues of spatial planning and its externalities; the potential for the enhancement of an efficient and sustainable spatial planning system; the beneficial effects of spatial planning on society; the relationship between sustainability and the dimensions of well-being.

Thus, the research will try to develop an analytical framework which will lead to a better understanding of the connection between efficient and sustainable spatial governance and planning and well-being. Following the discussion of the literature in chapter two, performance (2.1.5) is the term mainly preferred in the analytical part of this study as regards spatial governance and planning, since it provides a sense of a broader concept, which can then be studied in all its various components (including efficiency, effectiveness, sustainability and so on). Again following the discussion in chapter two, well-being is the term mainly preferred in the analytical part of this research, rather than QoL and standard of living, as it likewise provides a sense of a more complete and holistic analysis, including these components and enabling the investigation and discussion to focus on all the three dimensions, thus economic, environmental and social well-being. Moreover, since these concepts are complex it may be better to study them from an integrative and holistic viewpoint, rather than looking at the various dimensions separately. Indeed, using an approach that treats several dimensions (e.g. economic, environmental, social) separately may leave out interactions between the dimensions.

3.2 Applied model for understanding a spatial governance and planning system

As highlighted in chapter two (2.1.2), the system of spatial governance and planning will be analysed in this research in accordance with the assumption that it is an "institutional technology of government, operating as a hinge between the government system and the spatial production and consumption system" (Mazza 2003: 54, see also Janin Rivolin 2012: 67-68). In other words, the method applied in the course of this study assumes that the 'nature' of a spatial governance and planning system and how it is shaped and transformed over time are relevant aspects for its understanding. Indeed, the methodology is based on the notion that a planning system is led, like any 'technology', but at the same time considering the complexities of any 'institution', to "renovate its capacities in face of change" (Janin Rivolin 2008: 178–180; 2012: 72).

For Janin Rivolin (2012: 68), in particular, a 'government system' cannot do without a 'spatial governance and planning system' to assign individual rights for the functioning of the 'spatial production and consumption system'. As an institutional technology operating as a hinge between the public authority and the

social usage of space, the planning system allows and regulates this continuous process of land use rights assignation and contributes to the shape of the physical environment (*ibid.*: 68). Moreover, a planning system as an institutional technology has the capacity to be renewed over time and the quality of relationships between 'planning' and 'control' devices is crucial in determining the capacity of the system to respond to its social role. This relationship is not hierarchical nor consequential and Janin Rivolin (2008: 173) observes that this mechanism may appear somehow abstract, since the processes of plan elaboration and of spatial development control take place almost contemporaneously in practice and are continuously influenced by mutual interaction and mutual learning activities.

In this regard, Healey & Williams (1993: 702) and Mazza (2003: 56-58) point out that specific functions of planning systems always envisage combinations between 'transformative functions' and a 'regulative function':

- transformative functions (strategic, design, developmental functions) are addressed towards defining new goals of spatial development or preservation and new possible rights and values in land;

- the regulative function (at local, regional and national level) is addressed towards defending established rights and values in land.

All planning system activities addressed to transform space are therefore combined with control activities, aimed in principle at defending or compensating the existing public and private rights possibly affected by new spatial developments (Janin Rivolin 2008, 2012).

Based on these considerations, the conceptual model adopted for the analysis of the Swiss spatial governance and planning system is represented in the diagram below (figure 2), which illustrates in general terms the institutional technology of territorial governance and planning as a cyclical process resulting from the complex relations that connect the government system with the land use (or spatial production and consumption) system in a given institutional context over time. Thus, the four dimensions and their mutual interactions provide a useful model for analysing the various components that are all part of the Swiss spatial governance and planning system.

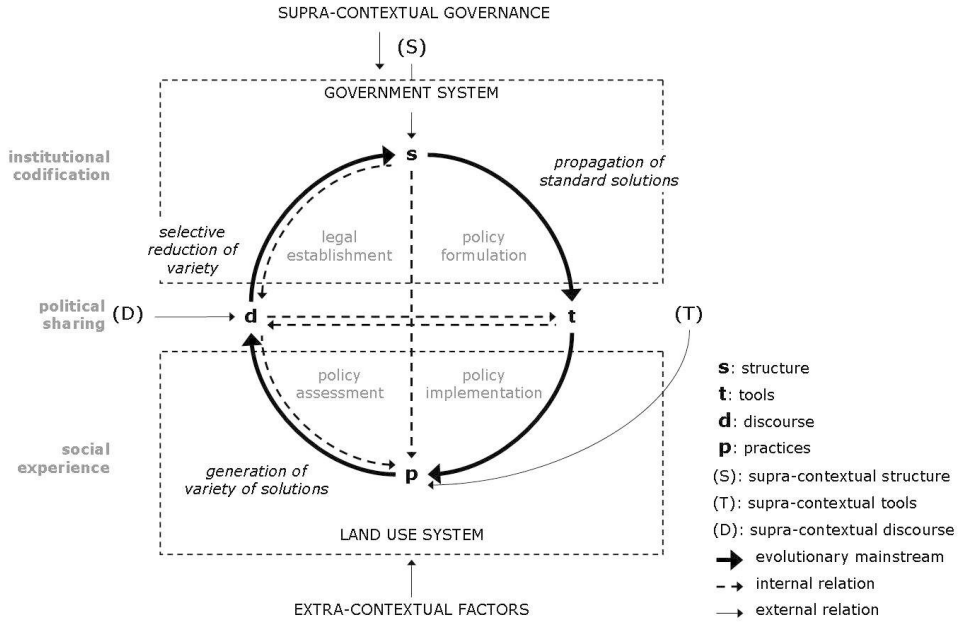


Figure 2: Simplified model of planning system evolution (Janin Rivolin 2012: 73)

In the model, the establishment and possible change of a spatial governance and planning system depends on: a particular context of 'practices' (p), the social experience of local urban policies through regional plans and projects; a competitive phase of 'discourse' (d) between the various (political, technical and social) actors; the existing 'structure' (s), with its set of constitutional and legal provisions; the 'tools' (t), such as spatial plans, programmes and control devices, as drivers of 'new' practices.

As anticipated in chapter one, the analysis of the domestic planning system in Switzerland is therefore going to focus especially on these four main analytical dimensions (table 1) and aims to answer the following questions:

- what is the administrative setting? (structure, s)
- what are the main planning instruments? (tools, t)
- how do discourses and ideas spread through planning processes, and do they influence planning approaches? (discourse, d)
- what is the social experience during the application of local practices? (practices, p)

Table 1: The four pivotal dimensions of a spatial planning system

Phase	Description
Structure	Constitutional and legal provisions of territorial governance: principles of the planning system, vertical and horizontal relationships, legitimacy of planning and control activities.

Tools	Spatial planning devices: various types of plans and programmes, forms of incentive and control, procedures for monitoring and evaluation.
Discourse	Formal and informal assessment of the outcomes of territorial governance in an institutional context: expression of political, technical and common knowledge, role of the élites and 'hegemonic concepts'.
Practices	Social experience of local policies through plans and development projects: public and private initiatives, planning and control activities.

However, it must be stressed that the overall process of establishment and change of a spatial governance and planning system, based on cyclical phases of policy formulation, policy implementation, policy assessment and possible legal achievement, is characterised by 'internal' and 'external' relations (see figure 2) that are as equally important as the four analytical dimensions for understanding. In particular, external influences on the government system (e.g. United Nations decisions, EU directives etc.) and on the land use system (e.g. global financial crisis, climate change etc.) constantly stimulate possible change in a domestic planning system. Thus, overall (Janin Rivolin 2012: 72-73):

- the 'structure' of territorial governance has a direct influence on tools and practices, a feedback relation with the discourse and a possible influence of supra-contextual structure (S), e.g. by the UN or the EU;

- the 'tools' for spatial planning have a direct influence on practices, a feedback influence with various territorial governance discourses, and can be conditioned by the structural dimension and by ideas and concepts through the competitive discourse, as well as by supra-contextual tools (T);

- the 'discourse' has an influence on tools and can be influenced by the structure and by wider discourses, while it can condition practices in the form of feedback relations. It can also be influenced by supra-contextual discourse (D), e.g. through transnational cooperation;

- spatial planning 'practices' are influenced by the structural aspects, by specific tools established for the implementation of policies and by the discourse.

Although the multiplicity of internal and external elements can challenge and stimulate both the 'government' and 'land use' systems to modify the established institutional technology of spatial governance and planning, in practice the process of adopting changes can be quite slow because of high transaction costs (political, social and economic). The evolutionary pattern of a planning system, as represented above, can however be a useful tool for visualising in a simplified way these analytical dimensions and mutual relationships in order to facilitate understanding of the system.

3.3 Indicators and data for understanding well-being

It is important to keep the analysis of the planning system in terms of the applied model distinct from the analysis of well-being through the available economic, environmental and social indicators in the same context. However, bringing together the two aspects can help show how the planning system affects well-being. The interactions and overlaps will therefore be crucial to the possible conclusions the thesis might be able to reach. Here again the five OECD criteria can be very helpful (5.2.1 and 5.2.2).

In any case, nowadays, there is a strong request for indicators that can be useful for understanding well-being in a given context. However, "indicators do just what they say: they only indicate. They cannot demonstrate causal links or provide explanations as to why a system is changing" (Morrison & Pearce 2000: 201). Moreover, it has been argued that indicators may distort priorities, focusing the attention on only a few issues, ignoring other relevant factors. In addition, it is important to highlight the necessity of analysing the availability of data before the close analysis. Wong (2000: 235) argues that indicators can "influence decision-making if they are chosen within a clear conceptual framework, measured at a spatial scale which is appropriate to the phenomenon concerned, and tailored to a particular policy instrument". As seen in section 2.3.7.3, indicators are a central focus of current EU Cohesion Policy in terms of efficiency and well-being.

According to the OECD (2014: 79), there are two major issues that a common statistical agenda for improving the measurement of the well-being of regions and cities needs to deal with: first, the most relevant scale needs to be understood (e.g. city, neighbourhood, region etc.) for the various dimensions of well-being; second, it is important to analyse how these dimensions interact further at different time horizons and spatial scales. Moreover, indicators should not be static, as contexts are in constant evolution. In the MONET system (see 3.4.2.1), for example, indicators are constantly being revised "as new focal points and framework conditions for sustainable development emerge" (Swiss Federal Council Sustainable Development Strategy 2016: 53).

In any case, choosing indicators useful for policy-making is extremely complex because it is a knowledge-intensive process. Since the local context and the system of values matter, "the selection depends on value judgements on which aspects of well-being are of greater importance in a given moment, these judgements are by nature place-based and are bound to be heterogeneous" (Barca & McCann 2011a: 10). Moreover, "determining which elements should belong to [the] list of quality of life features […] inevitably depends on value judgements about which aspects are of greater importance at a given place and time" (Stiglitz et al. 2009: 156).

The main international data sources on well-being used in this study are presented below. After the OECD data (3.3.1), which gives an overview of the

well-being in the various countries, Gross Domestic Product statistics (GDP, 3.3.2) and the Global Innovation Index (GII, 3.3.3) provide specific data on economic well-being. The Environmental Performance Index (EPI, 3.3.4) focuses on environmental well-being; while the Gini coefficient (3.3.5) and the Human Development Index (HDI, 3.3.6) concern social well-being. All these data sources include data and statistics that are appropriate for the analysis of well-being in Switzerland in the three dimensions of economic, environmental and social well-being that are the central concern of this study. The analysis is presented in chapter five (5.1.1, 5.1.2 and 5.1.3).

3.3.1 OECD data

The data gathered and analysed statistically by the OECD is a major source of information for this research. For example, among its many data reports and surveys, the OECD has developed a framework for measuring well-being and progress using a multi-dimensional approach, expanding the work done by the Commission on the Measurement of Economic Performance and Social Progress (Stiglitz et al. 2009). In particular, the Better Life Index allows researchers to compare well-being across countries, and the Regional Well-Being tool allows them to measure well-being in the various regions and compare it with the other OECD regions. These two tools are based on eleven topics which the OECD (2014) has identified as central to the quality of people's lives (housing, income, jobs, community, education, environment, civic engagement and governance, health, life satisfaction, safety, work-life balance or access to services). For each topic, one or two indicators have been selected by the OECD and a score has been calculated for each topic, in order to compare places and topics within and across countries.

Thus, the OECD conceptual framework for measuring well-being in regions and cities has seven distinctive features. "It (*ibid.*: 20-21):

1) measures well-being where people experience it, focusing both on individuals and on place-based characteristics, as the interaction between the two shapes people's overall well-being;
2) concentrates on well-being outcomes that provide direct information on people's lives rather than on inputs or outputs;
3) is multi-dimensional and includes both material and non-material dimensions;
4) assesses well-being outcomes not only through averages but also by how they are distributed across regions and groups of people;
5) is influenced by citizenship, governance and institutions;
6) takes account of complementarities and trade-offs among the different well-being dimensions;
7) looks at the dynamics of well-being over time, at its sustainability and at the resilience of different regions."

For the OECD, therefore, well-being is determined by both material living conditions and the subjective perception of the QoL. Among the dimensions of material living conditions are income and jobs, and housing conditions. The non-material dimensions of the QoL include health, education, environmental quality, personal security, civic engagement and work-life balance (OECD 2015: 23).

These criteria would seem to be extremely valuable in terms of the research questions this study seeks to explore. The same is true when some of the areas are looked at more specifically. For example, as regards at the relationship between local well-being and housing, the OECD (2014: 68) declares:

> *In measuring well-being, housing is an important dimension. Appropriate shelter is one of the most basic human needs, along with food and water. Furthermore, housing costs often represent the largest component of a household's income. Housing is also strongly connected to other well-being dimensions, such as health, income and life satisfaction.*

The criteria may also help regions and local municipalities to create and develop their own metrics and statistics of QoL and well-being, see for example the Urban Audit in Switzerland (3.4.2.2 and 5.1.4.3). At local and regional level, for example, the characteristics of some of the criteria, such as housing, are also closely linked to the territorial and spatial configuration (*ivi*).

3.3.2 Gross Domestic Product (GDP)

Gross Domestic Product (GDP) measures the overall output of goods and services at a market price, usually annually. It is used as an indicator of the economic health and standard of living of a country and GDP estimates are commonly used to determine a country's performance and to make international comparisons. Since the mode of measuring GDP is uniform and coherent in each country, outcome analyses have a high degree of accuracy. These measures also allow comparison of the current GDP data with data from previous years or quarters. Therefore, GDP can be analysed over long periods of time and be used to understand and measure a nation's economic growth, decline or recession.

However, there is an important ongoing current debate on the correctness of using GDP data in order to evaluate a country's economic performance and governments are trying to improve the accuracy and effectiveness of statistics based on GDP, for, even though it is a commonly used and widely recognised indicator of economic prosperity, it is far from being unproblematic. In fact, GDP is not a complete measure of economic activity and does not show differences in the cost of living and the inflation rates in the countries. So, GDP may have a different level of uncertainty in the different countries. Moreover, critics declare that the GDP statistic does not take into account the unofficial economy, such as the black market and other non governmentally reported transactions. Critics also

point out the tendency of GDP to be merely interpreted as a measure of material well-being. Nevertheless, the number of people in work is fundamental to any assessment of economic well-being and this indicator is potentially connected to health concerns and general issues of well-being (ESPON 2013: 10), which need to be better investigated. This is particularly interesting since, as the Knoema knowledge platform points out, the current world is increasingly focused on measuring well-being, governance, and environmental and natural resource depletion, all of which are explicitly or implicitly excluded from standard GDP statistics. Indeed, for Knoema (2017), "In an era of open data, GDP as a singular golden indicator could fade ever so slowly to make room for other unique measures that will only become increasingly easier to develop and maintain as improvements are made in global data access".

3.3.3 Global Innovation Index (GII)

Recent research has shown that it is hard to measure regional innovation through only one single indicator. Moreover, Barca & McCann (2011b:1) emphasise the public good nature of innovation, which can lead to further complications, since the effects of innovation usually extend beyond the region where the innovation was introduced. They also argue (*ivi*) that when "no single innovation or smart growth measure is available, [different types of information on various aspects of the process] have to be used to portray innovation". These could be scientific and technological developments, as well as the interactions among the stakeholders involved in innovation at the regional level. Alternatively, new statistical data could be devised to expand the available data and to enable regional innovation and its performance to be quantified and measured.

The Global Innovation Index (GII) is an annual indicator that ranks countries in terms of innovation. The GII includes indicators that go beyond the traditional measures of innovation, such as the level of research and development, recognizing the key role of innovation as a strong driver of economic growth and prosperity. Usefully for this research, GII points out which innovation policies have been effective, and which have not, providing the possibility to analyse the effectiveness of innovation policies.

3.3.4 Environmental Performance Index (EPI)

As observed above, economic and financial data on countries is continuously and precisely updated. However, no comparable platform or indicators for the environment appear to exist. In fact, the available data as regards environmental issues is sometimes imperfect, revealing uncertainty and gaps of knowledge. For example, there is a current lack of global datasets for national recycling rates, waste management or toxic chemicals. This would seem to be an important lacuna that needs filling.

Another parallel issue is the paradoxical concept of big data, which started to gain importance in the early 2000s, pointing out the inadequacy of traditional data processing applications because new datasets were becoming too large and complex, and suggesting new ways to identify patterns and trends for meaningful analysis. Indeed, today enormous amounts of data and information are being collected and used to support decision-making, create profit or lead to political gain.

> *But forests don't tweet, and whales don't shop on Amazon. So what does big data mean for the environment and sustainability?* (Hsu & Schwarts 2013)

The creators of the Environmental Performance Index (EPI) are still waiting to see the big data revolution enter the environmental domain. The 2016 EPI is a project led by the Yale Center for Environmental Law & Policy (YCELP) and the Center for International Earth Science Information Network (CIESIN) at Columbia University. They try to provide national datasets that measure environmental issues, such as climate change and air quality. However, they frequently create "indicators based on incomplete or imperfect data, which are meant to provoke policymakers to act on an environmental issue" (Hsu & Schwarts 2013). For them, one of the dangers "in creating these proxy measures is that issues with data gaps are often ignored because the underlying problems are masked". Hsu & Schwarts also posed the following questions at The Economist's Big Data Information Forum in San Francisco in 2013:

> *So how can we bring big data to environmental decision-making? What is needed to invigorate the same kind of massive data collection that tech companies and the private sector are harnessing to their advantage?*

The answer to the questions was given by Michael Flowers, the Director of New York Mayor Bloomberg's Office of Policy and Strategic Planning, and was government regulation, which is a significant endorsement of the importance of spatial planning and governance. Yet, government regulations and legislations often react much more slowly than companies and private sectors, and as seen in 2.1.6, speed should not be at the expense of quality outcomes. Nevertheless, one of the current challenges is to design and improve informative platforms to better collect and manage environmental information.

3.3.5 Gini coefficient

The Gini coefficient, also known as the Gini index, is used to measure inequality. The coefficient varies between 0, which represents complete equality, and 1, which indicates complete inequality. The coefficient can also be expressed as a number from 0 to 100 in order to express a percentage. Critics have pointed out that among the disadvantages of the Gini coefficient is the fact that it is not

cumulative across groups (i.e. the total of a society's Gini does not equal the sum of the Ginis for its sub-groups), as well as the fact that the coefficients are hard to interpret.

In any case, there is considerable variation in income inequality across the world's countries. Inequality as measured by the Gini coefficient is lowest in Slovenia, Norway and Sweden and highest in Chile, Mexico and Colombia. The coefficient is above average in the United States and Israel, showing that levels of income inequality are running at record levels in highly developed countries. Somewhat surprisingly, the coefficient ranks below-average in the Nordic and many other European countries, including Switzerland which ranks quite well in the global analyses (29.4 in 2016, Eurostat <http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=ilc_di12>, accessed on 4 January 2018).

3.3.6 Human Development Index (HDI)

As explained above, there is a growing awareness that GDP and other economic indicators and statistics are not enough to provide a full understanding of how society is doing. Thus, there is a new interest in QoL and well-being indicators in order to help communities become better places and to improve their QoL level. Yet, QoL is a multi-dimensional concept and it is complex to measure; for example, a good education can lead to a higher income and so make a positive impact on housing conditions. Therefore, attempts are being made to provide a more holistic assessment of societal performance. For example, the Human Development Index (HDI), promoted by the United Nations Development Programme, has introduced a new approach for advancing human well-being.

This innovative approach is more focused on people and their opportunities and choices. In fact, human development strongly aims to expand the richness of human life, rather than simply the richness of the economy in which human beings live. In particular, the HDI uses a series of indicators which provide a more comprehensive picture of a country's human development, such as the Gender Development Index, the Multidimensional Poverty Index and the Educational Achievements. Moreover, the HDI also provides supplementary indicators on the perceptions of well-being. The HDI includes indicators that reflect an individual's opinions and self-perceptions of various relevant dimensions of human development – quality of education, quality of health care, standard of living and labour market, personal safety and overall satisfaction with freedom of choice and life. The research also contains indicators reflecting perceptions of government policies on the preservation of the environment and the overall trust in the national government and judicial system.

3.4 Analyses and surveys for understanding the Swiss context

The Swiss system provides excellent information on the country's spatial planning and governance at the various levels. At the federal level, the Federal Statistical Office (FSO) and the ARE produce reliable and regularly updated statistics and reports, which can usefully augment and enhance the data provided by international performance indexes. At a cantonal and local level the data is likewise excellent, much of it also gathered and made available by federal bodies such as FSO, ARE, FOEN and VLP-ASPAN, the Swiss spatial planning association (4.2.2). The illustrative case study on the City of Lugano in Canton Ticino, presented in chapter five (5.3.3.1), is a further example of the country's good documentation of its spatial planning and governance. Moreover, the Swiss university departments hold regular conferences, seminars and workshops on spatial planning in the country, and produce high level international and national reports and publications on various key planning and policy issues and topics. A relevant publication for this research is the report (Scholl 2008) by the international group of experts who were invited to the country in 2006 in order to assess the country's spatial planning functions, opportunities and limitations and make recommendations. Other pertinent publications available in English include: Gerber (2016), Gerber et al. (2011), ISOCARP (2004), Jaeger & Schwick (2014), Keiner et al. (2003, 2004), Keller & Blaser (2007), Koll-Schretzenmayr et al. (2009), Muggli (2004), Rérat (2012), Schultz et al. (2003), Weber (2010). Switzerland publishes its official documents in the country's main national languages, often also producing English translations. All this has facilitated the researcher's accessing and gathering of information and data.

After the first year of her PhD research, the author was invited to take part in the Politecnico di Torino's research unit as part of the ESPON COMPASS 2016-2018 (Comparative Analysis of Territorial Governance and Spatial Planning Systems in Europe) research project. This involved gathering data and information on Switzerland for the project, as well as compiling the two part questionnaire which totalled over 90 pages. As a result, the author was able to collect a large quantity of data which has been most useful in the current research. As mentioned in 1.4, some of the tables and research findings presented in chapters four and five were prepared in order to complete the ESPON COMPASS project questionnaire. The author also contacted and met a number of experts on spatial planning in Switzerland. They included the following:

Dr. Martina Koll-Schretzenmayr, Institute for Spatial and Landscape Planning, (ETH Zurich, Swiss Federal Institute of Technology), who provided helpful background and current information on spatial planning and policy in Switzerland, particularly as regards the canton and city of Zurich.

Prof. Jean-David Gerber and Dr. Andreas Hengstermann, who organised the 2016 PLPR Conference on Land as a Scarce Resource held in Bern in February 2016, where the conference provided a state of the art overview of spatial planning and policy in Switzerland, especially as regards the canton and city of Bern.

Dr. Marco Kellenberger, Swiss Federal Office for Spatial Development (ARE), ESPON contact point for Switzerland and Liechtenstein, who provided valuable information on ESPON in Switzerland, as well as useful comment on the reciprocal planning and policy influences between the EU and Switzerland.

Their expertise and and knowledge have certainly helped to improve the author's knowledge and expertise. The City of Lugano also provided helpful information on the *Progetto Foce del Cassarate e Parco Ciani* (Mouth of the Cassarate River and the Ciani Park project, see 3.4.3, 5.3.3.1).

3.4.1 Measuring quality in the cantons

In the twentieth century, as will be seen in chapter four, innovative public management concepts have emerged in Switzerland, triggering discussion and debate on whether a better management and control of the quality and efficiency of spatial planning within the cantons is possible. Various attempts have also been made to set up indicators to analyse and monitor various public sector activities in the cantons, as will be seen in the next paragraph, although it was not always clear how these directly related to the planning process (Schultz et al. 2003). Morever, planning quality management mainly remained limited to the assessment and approval of plans by respective superior administrative levels during the plan revision process (*ivi*).

In any case, the increasing concern as regards the delivery of better management through the planning process has given rise to the creation of a new planning tool to improve quality measurement in cantonal spatial planning by two of the larger cantons. In 2001, the cantons of Lucerne and Grisons commissioned work to develop a planning instrument to enable the better measurement of quality in cantonal spatial planning. Yet, the approach is limited to measuring the outputs and outcomes of the guiding plan and does not focus on the wider performance of the planning authority or the planning process (*ivi*). In developing the instrument, the financial controlling process used in business administration and entrepreneurial management, which delivers an ongoing comparison between the goals of an organisation with the current actual state of delivery, served as a useful model. The aim was to introduce a more dynamic management of the plan, in which changes in conditions could be quickly reflected in the plan. The process as developed for the cantons of Lucerne and Grisons distinguished between the strategic level (policy aspirations) and the operational level (delivery process) in relation to the key elements of the plan. At the strategic level, the analysis of the

outcomes was made through the quantitative analysis of indicator data and the qualitative analysis of questionnaires with key stakeholders, whereas the validity of objectives was established through a process of participative review of policy objectives involving all the relevant stakeholders. At the operational level, the analysis of the outputs was conducted through a series of checklists and questionnaires, whereas the analysis of the impacts was made through the use of indicators to check the impact of key high-profile tasks (*ibid.*: 330-331). In particular, about forty core indicators were chosen for the canton of Lucerne to describe the achievement of objectives in the guiding plan. Various public and private stakeholders were actively involved in the preparation of the measurement tools, sharing the responsibility for the identification of the data and the delivery.

3.4.2 Swiss indicators

In any case, at a national level, in Switzerland indicators are seen as strategic in order to reach key economic, social and environmental objectives, through a clearer and more transparent decision-making process, and by reducing the weakness of the planning outcomes (Schultz et al. 2003). The indicators should be easy to measure and understand (with available data), showing the output influence of spatial planning policies. Therefore, indicators should not be seen only as a mere collection of data but as a dynamic triggering process. Qualitative information provides an essential balance and leads to a more sophisticated interpretation of performance (*ivi*). In fact, the balancing of quantitative indicator data with qualitative information can overcome some of the recognised limitations of indicators. The approach has, however, a number of weaknesses which Schultz et al. noted (*ibid.*: 334). These include: the reliance on internal assessment, rather than the more dispassionate assessment of an external body; the need for an independent cantonal 'controlling agency'; the tendency for vaguely defined objectives in the plan to be immeasurable, and therefore a need for plans to contain more specific measurable objectives; and the lack of political will to move towards more transparent and binding plans, due to the reduction of political discretion this may imply. In line with some of these comments and parallel to the initiatives at cantonal level (3.4.1), the Confederation has set up the MONET system of indicators as part of its sustainable development strategy.

3.4.2.1 MONET indicators

In order to evaluate its development, Switzerland has adopted a system of indicators, called the MONET indicators (Monitoring of Sustainable Development, *Monitoring der Nachhaltigen Entwicklung*). These indicators aim to provide information about the current situation and monitor the sustainable development in its economic, environmental and social aspects, also to demonstrate the country's position compared to other countries (<www.monet.admin.ch>). As the Swiss Federal Council, Sustainable Development Strategy

2016-2019 (2016: 53) declares, the MONET indicator system takes a “holistic approach which measures the quality of life of the present generation, as well as fairness of distribution geographically and over time”.

The project is carried out by the Federal Statistical Office (FSO), the Federal Office for the Environment (FOEN), the Swiss Federal Office for Spatial Development (ARE) and the Swiss Agency for Development and Cooperation (SDC). MONET (2015) has seventeen key indicators, and in order to evaluate if the country has a sustainable development, they take into consideration four main dimensions, presented here as described on its website (<www.monet.admin.ch>):

1) Meeting needs: how well do we live? (indicators: health, income, physical safety, unemployment).

Being healthy, feeling safe and having enough income to live are all needs that, when met, contribute to the well-being of the population. Enabling all individuals to live in dignity and enjoy a good QoL is a central goal of sustainable development.

2) Fairness: how well are resources distributed? (indicators: poverty, official development assistance, equality).

The concept of sustainable development is based on a demand for fairness. In this context, all individuals should have fair access to important resources such as education, income, health and clean air. Inequality and poverty must be tackled at the national and international level.

3) Preservation of resources: what are we leaving behind for our children? (indicators: teenage reading skills, public debt, investment, innovation and technology, biodiversity, built-up areas).

Sustainable development also means meeting the needs of the present without compromising the ability of future generations to meet their own needs. The QoL of future generations depends, in large part, on the state of environmental, economic and social resources they will be left in Switzerland and worldwide.

4) Decoupling: how efficiently are we using our natural resources? (freight transport, passenger transport, energy consumption, material consumption).

Here the MONET site further sets out the main policy objective: from a sustainable development perspective, it is important for people to ensure that the environment can survive the ways they seek to satisfy their needs. Thus, adopting more efficient and rational consumption and production modes should be achieved by promoting economic and social development which does not damage the environment. These MONET indicators provide some links between spatial planning and well-being and are looked at more deeply in chapter five.

3.4.2.2 Urban Audit

In 2016, the Urban Audit in Switzerland applied the OECD framework for measuring the QoL in eight Swiss cities: Zurich, Geneva, Basel, Bern, Lausanne, Lucerne, St. Gallen and Lugano (Federal Statistical Office 2016). To take into account the particular circumstances of Swiss cities, and to better depict the attractiveness of individual locations, the OECD QoL dimensions have been expanded to include infrastructure and services, mobility, and culture and leisure. According to the Urban Audit (*ivi*), Qol is an important element in a city's attractiveness, since it attracts people and businesses and generates capital for development. Moreover, QoL is also shaped by the place-based features and characteristics of a particular city. The Urban Audit data are presented in a certain amount of detail in chapter five (5.1.4.3). They are useful to illustrate the differences in the various QoL dimensions as regards the different cities, highlighting their place-based nature and revealing interesting aspects as regards the country's fragmentation/cohesion dichotomy.

3.4.3 Empirical analysis

In order to decide if there is an effective way to evaluate a planning system's efficiency and performance, it can be appropriate to start from a 'narrative' analysis and then move to an empirical one. This research aims first to identify the measures and variables which have been taken into consideration in similar studies (e.g. the most popular studies put into correlation land use regulation and housing prices, see e.g. Quigley & Rosenthal 2005), and to look at the indexes that are used to measure synthetically relevant attributes of planning policies, and then to see if it is possible to apply them contextually. It is important to choose and measure relevant land use regulation policy variables in order to carry out a sound analysis, remembering that measuring land use restrictiveness is difficult (see Ihlanfeldt 2005: 12). Therefore, in order to understand how the complexity of spatial planning issues can be combined with the complexity of QoL, an empirical test could be constructed and applied to observe and map the effect of a number of institutional variables (e.g. land use regulation) on the 'happiness' and welfare of Swiss citizens in the different cantons (see e.g. Frey & Stutzer 2000, 2.3.6). A possible future research development stemming from this study could involve the setting up of an econometric cross-sectional analysis and QoL indexes, in order to construct a database which would provide reliable policy-making information and which could be applicable to other contexts (6.3.3).

A project from the Ticino Canton on the *Foce del Cassarate e Parco Ciani* (Mouth of the Cassarate River and the Ciani Park) in the Municipality of Lugano has been chosen in order to provide an illustrative example of spatial development in Switzerland; it is presented and analysed in chapter five (5.3.3.1).

3.4.4 Mapping liveability

Research has shown that while the basic elements of liveability may have changed little over the years, the ability to measure their inherent qualities has greatly increased with technological innovations (Southworth 2003, Carmona & Sieh 2004). Indeed, new technologies such as GIS (Geographical Information System), are increasingly efficient and accessible, enabling and improving opportunities to collect, represent and interpret data. In particular, major innovations in computer-based mapping and aerial imagery have opened up possibilities for city-wide mapping of great accuracy that can be easily updated. Thus, most major cities now have GIS bases for the city to which layers of information may be added about the quality, form and management of city spaces, as well as about development opportunities, investment proposals, social infrastructure, ecological resources, demographic trends and policy frameworks. Therefore, GIS technologies make many of the liveability qualities, such as those pinpointed by the OECD (for example housing and access to services, see 3.3.1), directly measurable and controllable at city and regional scales.

Perhaps this could be another future development emerging from the study. In fact, interesting work has, for example, been carried out on urban sprawl in Switzerland using GIS by Jaeger and Schwick (2014), who have developed the Weighted Urban Proliferation (WUP) method (index) for measuring urban sprawl (see also 5.1.2): where the degree of sprawl is higher, buildings are more dispersed in the landscape and the utilization intensity of built-up areas is lower (i.e. the land uptake per inhabitant or job is higher).

3.5 Criteria for evaluation

As Stiglitz et al. (2009: 11) observe, “capturing quality change is a tremendous challenge, yet this is vital to measuring real income and real consumption, some of the key determinants of people’s material well-being”. Nevertheless, even if there is a strong pressure to develop outcome indicators to measure an organisation’s success, indicators within the public sector remain rare because of the absence of profit reasons and because of the difficulties associated with measuring multiple complex objectives and stakeholders, and of establishing causal links between actions and outcomes (Carmona & Sieh 2004: 8). Moreover, as the RTPI (2008: 24) suggests, it could be useful to “separate outcomes from contexts”, in order to achieve more effective policy-making, but that “there are many untested assumptions about cause and effect and that there is not a prudently proved conceptual framework to guide the analysis”.

3.5.1 Measuring planning's contribution

The challenge to isolate the particular contribution of planning is therefore difficult to overcome. However, some planning authorities attempt to do so, for example in the UK. As Carmona & Sieh (2004: 324) point out, "key measures include stakeholder views, changes to development patterns over time, and the quality of applications for planning permission (perhaps the key input into the process), and how these are influenced by policy." Commenting on their major study, they state (*ivi*) that "the empirical work confirmed the need to move beyond vague aspirations in policy, to clearly defined and measurable expressions of quality if judgements about the value added by planning are to be made".

Research providing an international perspective on measuring quality in planning can be found in the 2003 special issue of *Built Environment* 49(4), where the introduction by Matthew Carmona (2003a) and the other papers present a rich variety of relevant experiences and research from eight different countries, including Australia, New Zealand and the United States as well as a number of European countries, among them Switzerland (Schultz et al. 2003). Other valuable studies are those carried out by Carmona & Sieh (2004) and Gleeson (2002).

For the RTPI (2008: 59), the search for a perfect and valid set of indicators to measure the effectiveness of planning and the higher level planning outcome is a holy grail. "Furthermore, it is very clear that there is not a single 'perfect' indicator standing out from the set that can be used as a representative to measure the complexity and multi-dimensional nature of spatial planning outcomes" (*ibid.*: 41). Carmona (2007: 12) argues that "it would certainly be preferable to measure nothing at all, rather than run the risk of developing another (albeit different) distortionary measurement system". Yet, even though the challenge to isolate the particular contribution of planning might be difficult to achieve, it is nevertheless a worthwhile objective for planning authorities to attempt to do (Carmona & Sieh 2004: 324).

It is important to remember that the "spatial processes of change and the socio-economic and environmental driving forces do not stop at administrative boundaries" (RTPI 2008: 14). Therefore, the territorial lens and a place-based approach are important not only for highlighting spatial differences, but also because public policies can hinder or promote well-being, increasing or decreasing the capabilities and functioning of the people they administer (Sen 1993, Laurent 2013, OECD 2014: 26). It is in fact the "spatial dimension of land use allocation that interacts with other sectoral policy activities to create different economic, environmental and social outcomes" (RTPI 2008: 37).

3.5.2 Developing a measurement framework

Developing a measurement framework is important and, as Gleeson (2002: 5) argues, attention must be paid "to the new environmental, social and governance

imperatives that constitute the contemporary context for planning". Gleeson's 2002 policy paper, written with both the Australian and the international planning community and debate in mind, draws attention to the need for the impact and influence of planning to be measured in the light of three developments: its firm positioning under the rubric of sustainability; new democratic forces demanding environmental justice; the rise of neoliberalism. Gleeson raises an important issue (Carmona & Sieh 2004), which is particularly relevant as regards the difference (and thus the contribution) that planning makes to individual, community, environmental and social well-being. He also identifies various dimensions which "capture, broadly, the key outcomes of contemporary planning" (2002: 5), as will be seen in chapter five (5.3.1), also formulating them as questions, that are appropriate in order to frame the measurement process, such as the: economic (how does planning increase efficiency and innovation?); environmental (how does planning improve environments?); social (how does planning improve social environments?); cultural (how does planning strengthen cultural qualities?); democratic (how does planning enhance participation?) and governance (how does planning enhance the coordination and effectiveness of institutions that shape the development of social, economic and environmental processes?).

Considerable information and data on outcome indicators is provided by the national and European statistics. These include some of the surveys which already encompass all the EU Member States and some other European countries, such as Eurostat, the OECD, the EU-SILC (European Union Statistics on Income and Living Conditions) and the CIS (European Union Community Innovation Survey). However, according to Barca & McCann (2011a: 9), various regional statistics (e.g. GDP per capita) should be only used as 'context indicators' as they might be influenced by a number of external factors and so might not be satisfactorily responsive to the specific policy being analysed. In any case, there should be increasing investment in expanding these data to include regional information; at the same time, data availability should be improved and likewise measures aimed at improving sustainable development and well-being. This is already occurring in various Member States.

As stated before, this study also examines the possibility of identifying a coherent and integrated set of indicators for spatial planning outcomes in Switzerland. To achieve this, the research looks at existing wide-ranging indicators and datasets (e.g. OECD data and MONET indicators, see 3.3.1 and 3.4.2.1) available in the public domain that can prove appropriate for the measurement of spatial planning outcomes, while chapter five (sections 5.2 and 5.3) takes an in-depth look at indicators in spatial planning also as regards measuring the connection with well-being in the Swiss context.

Briefly, after analysing the state of the art of the Swiss spatial planning and governance system in chapter four, using the model presented and explained

above (3.2), the influence of spatial planning on well-being in the country is examined through three progressively detailed lenses.

First, the five OECD evaluation criteria (relevance, efficiency, effectiveness, impact and sustainability), which a number of national governments, the EU and some international development agencies have adopted for guiding policy assessment and development assistance (OECD 2010: 9), will be applied to evaluate the performance of the Swiss spatial planning system (in 5.2.1 and 5.2.2).

Second, Gleeson's (2002) methodological pointers for measuring spatial planning's contribution, set out above, are examined (in 5.3.1) as regards the Swiss system.

Third, in order to assess the interconnections between spatial planning and well-being in 5.3, the study will take a deeper look at five criteria which the ESPON TANGO (Territorial Approaches to New Governance) 2011-2014 project considers to represent good territorial governance and spatial planning. These are: coordinating actions of actors and institutions; integrating policy sectors; mobilising stakeholder participation; being adaptive to changing contexts; and realising place-based/territorial specifities and impact (5.3.2).

3.5.3 Some further methodological considerations

Overall, possible limitations of the present research could be linked to the 'territorial and scalar trap' (Agnew 1994: 58-59) and the belief that spatial policy necessarily involves a strict separation between 'inside' and 'outside', and an affirmation of the national scale over the others (Giaccaria 2014: 81). Moreover, it is often "difficult to combine macro-institutional analysis with quantitative micro-analysis" (Getimis 2012: 37). With specific regard to planning, Nankervis (2003: 317) observes "that in any attempt to measure successful planning there are several limitations, and thus caveats: the difficulty of identifying what is a good outcome, the problem of measuring complexity, and the issue of confusing quantity of inputs with quality of outputs." Moreover, given the different histories and concepts pertaining to each particular system and their different linguistic representations, the researcher needs to be constantly aware of the related difficulties of possible contradictions and overlaps in the terminology used, and the importance of trying to find equivalences even though this might not always be possible. In addition, as Huang (2013: 36) observes, there could be "three interrelated methodological challenges, namely the risk of misinterpretation, the validity of comparative research findings and the issue of cultural sensitivities".

Switzerland has a particular issue with languages (see also 2.1.2) as Scholl (2008: 4) points out, commenting on the report of the international group of experts who were invited to the country in 2006 to assess its spatial planning, which was published in three of the country's official languages (French, German and Italian) and also in English: "The work of translation has once again brought

home to us the fact that no unified terminology exists for spatial planning. This not only clarifies the cultural and language boundedness of the discipline, it also explains the difficulties in understanding and communicating about spatial planning and development across national and language boundaries".

Although graphs and diagrams make information easier and clearer to comprehend, they can sometimes be criticised in terms of method. Here, as explained above (3.2), the conceptual models applied are based on well-grounded research using a consistent analytical approach in order to explore territorial governance as an institutional phenomenon, which is subject to permanent social evolution as well as competition. Nevertheless, the authors themselves (Cotella & Janin Rivolin 2015) point out that abstractions and simplifications were needed for the description of the diagrams, because they are not designed to focus in detail on the 'physical' outcomes of the territorial governance operation, but rather are determined by an endless variety of circumstances, factors and individual behaviours.

Finally, the study uses the term spatial planning in its broad sense in order to take into consideration a wide range of spatial development. This follows the use of the term by the ESPON COMPASS project, which emphasises the overlap between territorial governance and spatial planning (2.1.2). It also allows the presentation to include, under the spatial governance and planning umbrella, a wide gamut of programmes and projects in order to explore the link between spatial planning and well-being. Thus, the study could be considered at some points to be somewhat biased in favour of planning's contribution. In any case, the author appreciates that some of the conclusions would benefit from further investigation at a more detailed case study level.

Chapter 4

Spatial governance and planning in Switzerland

This chapter presents an overview of spatial governance and planning in Switzerland, describing its main features and characteristics. Particular importance is given to the country's federal and cantonal structure, as well as to its delegation of competences to the local level. First, the chapter (in section 4.1) presents and discusses the main comparative studies on European spatial planning systems. Then, using a four-dimensional model (see 3.2 above), the current status of the Swiss system is analysed in terms of: structure (the set of constitutional and legal provisions) in section 4.2; tools (spatial plans, programmes and control devices, as drivers of 'new' practices) in section 4.3; discourse (between the various interested actors) in section 4.4; and practices (the social experience of local urban policies through regional plans and projects) in section 4.5. Sections 4.2, 4.3 and 4.4 all contain subsections looking at Switzerland's national, cantonal and local levels. The information presented in these sections comes largely from analysis of the original documents and other relevant materials widely available in Swiss government and official sources. Finally, section 4.6 reappraises the positioning of the Swiss system of spatial governance and planning.

4.1 Classifications of planning systems in Europe

In order to determine which planning system tradition Switzerland belongs to, it is useful to first provide a brief overview of the planning systems in Europe and the attempts to classify them into families and ideal types. Because Switzerland is a federal country in the heart of Europe, this section of the chapter will therefore first outline the main comparative studies on the European systems, and then (in

4.6) see how Switzerland fits into these planning traditions and ideal types or whether if it has developed a system all of its own. The chapter takes into account recent related research by scholars (Muñoz Gielen & Tasan-Kok 2010, Buitelaar & Bregman 2016, Evers & Tenekes 2016, Scholl 2008, Weber 2010, Hengstermann & Gerber 2015, Gerber 2016) whose studies have drawn attention to important developments and shifts in planning emphasis and practice, such as the increasing influence of flexible private-law and the use of instruments which are incentive-based as complements to instruments which are more binding, like zoning.

4.1.1 European planning classifications

Growing interest in the field of economic and regional planning has led to an increase in the attention of comparative research, while cooperation among planners across regional and national borders has given rise to a wider exchange of ideas and practices, particularly since the late 1990s (Nadin & Stead 2008a: 36). Even though the term 'spatial planning' is relatively new (as discussed in section 2.1.2), the concept itself is rooted in planning traditions long present in Europe. Therefore, planning systems should be understood as "embedded in their historical context, the socio-economic, political and cultural patterns that have given rise to particular forms of government and law" (Nadin & Stead 2008a: 35). According to Newman & Thornley (1996), there is considerable variety in Europe between institutional planning approaches and spatial planning traditions. They agree with Healey & Williams (1993: 701) that planning systems may be differentiated by "variations in national legal and constitutional structures and administrative and professional cultures" (Newman & Thornley 1996: 27). The great many aspects that influence planning in practice are reflected in the variety of planning. Moreover, comparative research on spatial planning systems began relatively recently, in the context of European Community integration (Davies et al. 1989, Healey & Williams 1993, Newman & Thornley 1996, Balchin et al. 1999, Janin Rivolin 2012). As pointed out in 2.1.2, there is still some uncertainty concerning the impact of mutual learning on national planning systems and planning policies (Nadin & Stead 2008a: 35), thus rendering it methodologically difficult to define and measure.

So far, there have been three main attempts to classify European planning systems to enable fruitful methodological comparison. The first, now largely considered to be superseded, was based on the concept of 'legal families', the second on that of 'ideal types', and the third, currently the subject of considerable debate, revolves around the issue of how to deliver land use transformation rights. Subsections 4.1.2 and 4.1.3 here will look at the legal families and ideal types, before focusing on the delivery of land use transformation rights in subsection 4.1.4. Subsection 4.6.1 will appraise Switzerland's collocation within these classifications, and then look at Switzerland and the neo-performative model in

subsection 4.6.2. Finally, subsection 4.6.3 will delineate the current and future scenario.

4.1.2 Legal families of planning systems

Spatial planning systems have generally been classified in terms of two principal approaches. The first begins by classifying the administrative and legal systems in which planning takes place according to families. The second applies a wider set of criteria which then gives rise to a set of ideal types. A first attempt to define the planning families in Western Europe was carried out by Davies et al. (1989) in the late 1980s on the request of the British government, in order to investigate the modes of development control in five different countries (Denmark, France, West Germany, Netherlands and the United Kingdom). The study concentrated on the classification of planning systems, taking into consideration as its main point of reference the legal basis and administrative structure of spatial planning. Thus, the nature of the planning was mainly identified as a product of governmental provisions and, as a consequence, planning systems were generally classified in terms of broad legal families and government structure. Davies et al. (*ivi*) illustrate the existence of two main planning traditions and divide Europe into two broad families (table 2): one is linked to the concept of Common Law (English and Anglo-American Law), mainly based on legal precedents; while the other is related to Civil Law (Roman Law, Napoleonic Code) and is based on defined principles. Therefore, the planning systems reflect the difference in the planning traditions.

Table 2: The two families (Nadin & Stead 2008a: 39, based on Davies et al. 1989)

Common Law	Napoleonic Codes
England	DK, DE, FR, NL

In the 1990s, other authors followed a similar classification approach, but broadening the field of study to up to 14 European countries. In their mapping of European planning (figure 3), Newman & Thornley (1996) also emphasise two main aspects as determining the nature of planning systems: their administrative and their legal dimensions. Newman and Thornley's planning families provide a starting point to understand to what degree Swiss planning converges with or diverges from the other European approaches, as will be seen in 4.6.1. Moreover, their studies reveal a Europe that is far more complex than it was thought to be (table 3). In short, it was soon "pretty clear that behind the formal façade different kinds of applications may exist in practice" (Larsson 2006: 1).

Figure 3: The legal and administrative families in Europe (based on Newman & Thornley 1996: 29)

The British Family is clearly distinct, as it is geographically isolated from the other families. The UK system is plan-led and there is a strong emphasis on national coordination and consistency being provided by the central government, although the implementation of most planning functions takes place at local level. Britain is described as a centralised unitary state; yet even though local authorities play an important role, they are less strong than those in the Nordic countries (CEC 1997).

The Napoleonic Family, which is named after the legal style introduced by the French Code Civil (1804), "has a tendency to use abstract legal norms and enjoy greater theoretical debate than the British style" (Newman & Thornley 1996: 31). Moreover, the system tries to predict the potential disputes so as to formulate a complete system of rules and gives considerable importance to central governments.

The Germanic Family's legal traditions are very similar to the Napoleonic Family, since there are relatively few distinctions between Romanic and Germanic legislation. But this family can be distinguished from the previous one because of the importance of the federal character. The governmental systems of the members of the Germanic family are clearly federal, where the regional governmental level and the federal level both have autonomy and legislative power spheres (CEC 1997). This gives rise to a need for horizontal negotiation and for subsidiarity to be discussed, given the specific governmental structure and allocation of administrative responsibility. This classification is useful for the present study because Newman & Thornley (1996: 62-63) position spatial planning in Switzerland in this category, together with Germany and Austria. The positioning of Swiss spatial planning is considered in depth in section 4.6.1.

The Nordic Family presents a highly decentralised division of powers, where spatial planning is reduced to a minimum at the national level and where there is only a weak representation of regional planning. “The emphasis is given to the municipalities, even if the precise shaping of this competence differs from country to country” (Böhme 2002: 46). Nonetheless, there are strong links between the regions and the central government. Both Newman & Thornley (1996: 35) and Böhme (2002: 47) consider local self-government to be one of the cornerstones of Nordic constitutions.

Table 3: Planning system typologies 1 (Nadin & Stead 2008a: 39, based on Newman & Thornley 1996)

Nordic	British	Germanic	Napoleonic
DK, FI, SE	IE, UK	AT, DE	BE, FR, IT, LU, NL, PT, ES

The use of administrative structures and legal families to identify and explain differences between planning systems is appropriate since the administrative structure of government and the legal style provide robust frameworks for the operation of the planning system (Nadin & Stead 2008a: 38). However, this approach has been criticised by various studies as having a number of limitations, because it tends to overemphasize the formal system of planning and the effect of variation in legal styles and administrative structures, rather than the reality of its operation in practice. In fact, according to Nadin and Stead (2008b: 15; reported in Janin Rivolin 2012: 65), government and legal frameworks are “important for the operation of planning but planning systems can operate in similar ways under very different formal government and legal arrangements”. For this reason scholars began to analyse a number of other contextual factors.

4.1.3 Ideal types of planning systems

In the mid 1990s, the European Commission involved experts of the 15 EU Member States in order to elaborate a Compendium on spatial planning systems in Europe. The result was the creation of the EU Compendium of Spatial Planning Systems and Policies (CEC 1997), “the first comparative study in this field to be commissioned by a supranational policy institution” and which “adopted a more complex and sophisticated approach in order to position European Member State planning systems” (Janin Rivolin 2012: 65). In fact, the Compendium presents an effort to overcome the limits of previous comparative studies and to describe each national case. Since it is not easy to define the characteristics of different traditions, many variables may be chosen so as to pinpoint the essential features of a planning system. In order to proceed with the methodological comparison, the EU Compendium of Spatial Planning Systems and Policies (CEC 1997: 34) utilized the following seven criteria: the scope of the system, the extent and type of planning at national and regional levels, the locus of power, the relative roles of

the public and private sectors, the nature of the system of law, the constitutional provisions and administrative traditions, the maturity or completeness of the system, and the distance between expressed objectives and outcomes (table 4).

Table 4: The criteria of comparison (CEC 1997)

Criteria	Characteristics
The scope of the system	The range of policy topics over which the planning system has some competence or influence, and the extent of integration between the spatial planning and investment in particular sectors.
The extent and type of planning at national and regional levels	An important factor since it is here that the arrangements for spatial planning in the Member States tend to differ more significantly. In fact, there is a considerable variation in the approaches to national and regional spatial planning.
The locus of power	This aspect refers to the extent to which the power is centralised, regionalised or localised.
The relative roles of public and private sectors	The extent to which the realisation of spatial planning policy is reliant on public or private sources, and the extent to which development might be characterised as predominantly plan-led or market led.
The nature of the system of law	This aspect is related to the legal framework of a particular system of spatial planning.
Constitutional provisions and administrative traditions	It is related to the socio-historical background and its current influence on a planning system.
The maturity or completeness of the system	It refers to a number of factors including: - the degree of public acceptance of the need for planning and regulation; - the provision of up-to-date policy instruments; - the degree of vertical integration and cooperation between levels of administration; - the existence of transparent and productive consultation mechanisms available to incorporate the many relevant interests in the planning process and integrate the work of different levels of administration and other official organisations.
The distance between expressed objectives and outcomes	It is a measure of the extent to which actual development is in accordance with stated spatial planning objectives and policies.

On the basis of these criteria the Compendium identified four broad ‘ideal types’ of planning systems within the EU: the regional economic planning approach, the comprehensive integrated approach, the land use management and the urbanism tradition (CEC 1997: 36–37, see figure 4 and table 6). The same criteria (those in table 4 above positioned on the left) were linked by Nadin & Stead (2009) to these

four ideal types as can be see in the table below (table 5), where the seven criteria are positioned in the top row and the 'ideal types' are on the left, showing the intersections between them. Janin Rivolin (2017: 7-8) emphasises the twelve year timespan between the two representations of the criteria, observing that Nadin & Stead have "revealed the summary of evaluations, [and that] this summary highlights – even if the compendium was careful not to make explicit these conclusions – the lower maturity of the system and the wider distance between goals and outcomes (or lesser effectiveness) of the 'urbanism tradition' characterizing the southern European countries".

Table 5: The criteria for further comparative evaluation (Nadin & Stead 2009)

Type of system	Legal basis	Scope of planning	Scale of planning	Locus of power	Public or private	Maturity of system	Distance between goals and outcomes
Regional economic	mixed	wide	national planning	centre & local	public	mature	mixed
Comprehensive integrated	mixed	wide	multi-level planning	mixed	public	mature	narrow
Land use management	discretion	narrow	local	centre	mixed	mature	narrow
Urbanism	code	narrow	local	local	mixed	immature	wide

The principle underlying the 'regional economic' approach is based on an understanding of spatial planning in broad terms. It takes into consideration the achievement of economic and social goals, with a particular focus on disparities between a country's different regions, especially as regards employment, wealth and social conditions. Strong central government is at the basis of this approach, which thus has a key role in the making of public sector investments and in managing the country's development. The planning system in France and to a lesser extent Portugal is closely associated with this approach. According to the EU Compendium, many other countries pursue regional policy objectives, but this may not be the dominant characteristic of spatial planning, and the geographical components are usually less articulated. For example, Germany has carried out a considerable amount of regional economic planning in the programme of support for the Eastern Länder (CEC 1997: 36).

The 'comprehensive integrated' approach is based especially on the coordination of spatial planning rather than on economic development, since spatial planning is "conducted through a systematic and formal hierarchy of plans from national to local level, which coordinate public sector activities across different sectors" (CEC 1997: 37). Mature systems (table 5) are associated with this tradition (*ivi*) which has two sub-types. The first is linked to federal systems and the second features strong local authorities whose responsibility is shared with the central government. The latter approach is followed by the Nordic countries, where a major emphasis has been placed on public sector investments

and a rational planning system (e.g. Sweden, see Solly 2013, 2016c). In Austria, Germany and Switzerland a similar systematic structure and process is followed, but in these federal systems the regional and cantonal governments also play an important role.

The emphasis in the 'land use management' approach focuses on a narrower role for spatial planning, which is centred on controlling land use change at both local and strategic levels. The principal tool for making sure that growth and development are sustainable is regulation. The UK is the main example of this tradition (CEC 1997: 37). In this approach, the majority of the planning work is undertaken by the local authorities, but power can be exercised by the central administration, through its supervision of the system and through its setting out of central policy objectives.

Architectural aspects strongly influence the 'urbanism' tradition, which gives a central focus to issues of urban design, building control and townscapes. This process has significantly characterised many Mediterranean Member States (e.g. Italy). In these countries the regulation is characterised by strict zoning, codes and regulations (*ivi*).

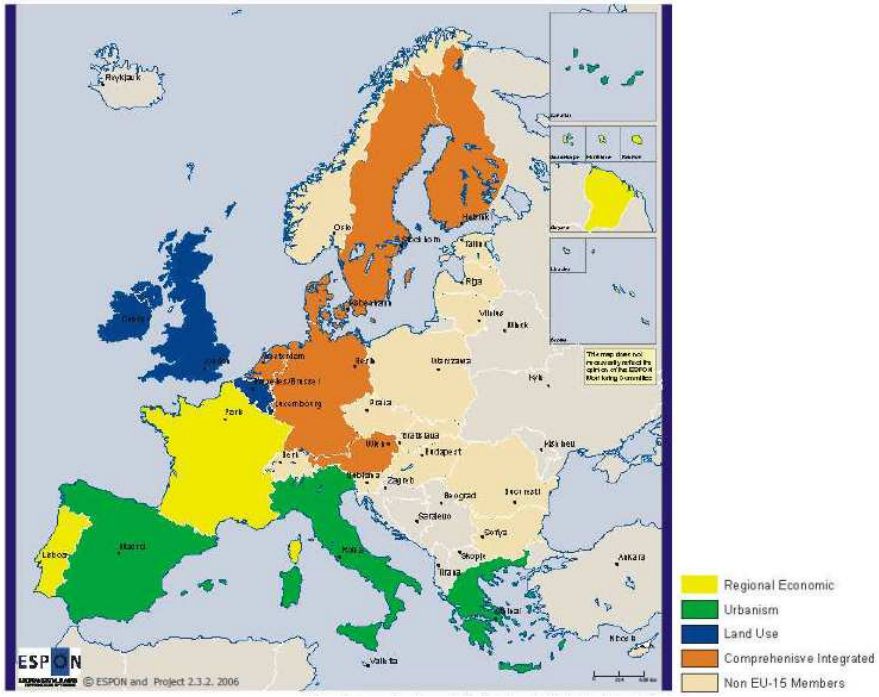


Figure 4: European spatial planning system ideal types (CEC 1997, Farinós Dasí 2007: 111)

Table 6: The four ideal types of planning systems in Europe (Nadin & Stead 2008a: 39, based on CEC 1997)

Regional economic	Comprehensive integrated	Land use managemenent	Urbanism
FR, PT (+DE)	AT, DK, FI, DE, NL, SE	IE, UK (+BE)	GR, IT, ES (+PT)

To a certain extent these criteria try to address the nature of systems in operation, although the formal structure of planning is still emphasised by the ideal types. Therefore, as the EU Compendium drafting experience has demonstrated, "criteria that evaluate the effectiveness of a system are particularly controversial" (Nadin & Stead 2008b: 8). Furthermore, "the precise nature of convergence, or for that matter, divergence, is difficult to measure and assess" (Nadin & Stead 2008b: 3, Janin Rivolin 2012: 67). Faludi (2000) stresses that the comprehensive integrated approach and the regional economic planning approach are both important as regards the European Spatial Development Perspective (ESDP), because they have both influenced the debate on the ESDP. Moreover, the traditions described indicate the existence of many different styles in the main planning systems.

In 2006, a European research project (ESPON 2.3.2, see Farinós Dasí 2007) updated the analysis previously promoted by the EU Compendium, expanding the classification of the four ideal types to the new EU Member States (table 7). The study also covered Norway and Switzerland, as will be explained in 4.6.1. The aim was to observe the influence of the process of Europeanization on the planning systems. For Nadin & Stead (2008a: 39), the results of the study raised concern, since the original attempt of the analysis was to take as a reference the four ideal types but it ends up treating them as 'families'. However, "apart from these final outcomes and possible misunderstandings […] the EU Compendium had the merit of posing the need for a wider notion of planning system, coming from a different view of its institutional substance" (Janin Rivolin 2012: 65).

Table 7: The expansion of ideal types 1 (Nadin & Stead 2008a: 39, based on Farinós Dasí 2007)

Regional economic	Comprehensive integrated	Land use management	Urbanism
FR, DE, PT (+IE, SE, UK) HU, LV, LT, SK	AT, DK, FI, NL, SE, DE (+BE, FR, IE, LU, UK) BG, EE, HU, LV, LT PL, RO, SL , SV	BE, IE, LU, UK (+PT, ES) CY, CZ, MT	GR, IT, ES, CY, MT

4.1.4 Delivering land use development rights

A further possibility of classifying planning systems, albeit less consolidated in comparative studies and proposed in some recent essays (e.g. Muñoz Gielen & Tasan-Kok 2010, Knieling et al. 2016, Janin Rivolin 2008, 2017) focuses on the way in which the State (or the public authority) delivers the transformation rights on the use of land, as a pivotal aspect of the whole operation of the system of spatial governance and planning. In other words, the difference is characterised by alternative modalities of combining planning and control activities within the system. Briefly, the models can be classified as: conformative (more traditional and persisting especially in Southern Europe), performative (developed especially in the UK) and neo-performative (recently established in some Northern and Western European countries).

In the first case (see figure 5), the system's operation is based on the capacity (or claim) to 'conform' individual development projects to a collective spatial strategy. So, development rights are previously assigned by a binding zoning map, which has the function to oblige projects to conform to the strategy. In the second case, the system's operation is based on promoting only those projects that are able to perform the collective strategy. Therefore, development rights are assigned after the evaluation of projects, taking the non-binding plan and other considerations into account. These two models are the more traditional in Europe; but a third model also exists, classifiable as the neo-performative model. In this case, "while continuing to be based on binding zoning," the model "has neutralized in one way or another the 'preventive' legal effectiveness of the plan" (Janin Rivolin 2017: 12). Thus, development rights are assigned after the negotiation of development projects, and, as can also be seen in figure 5, development rights are controlled before the plan assumes force of law.

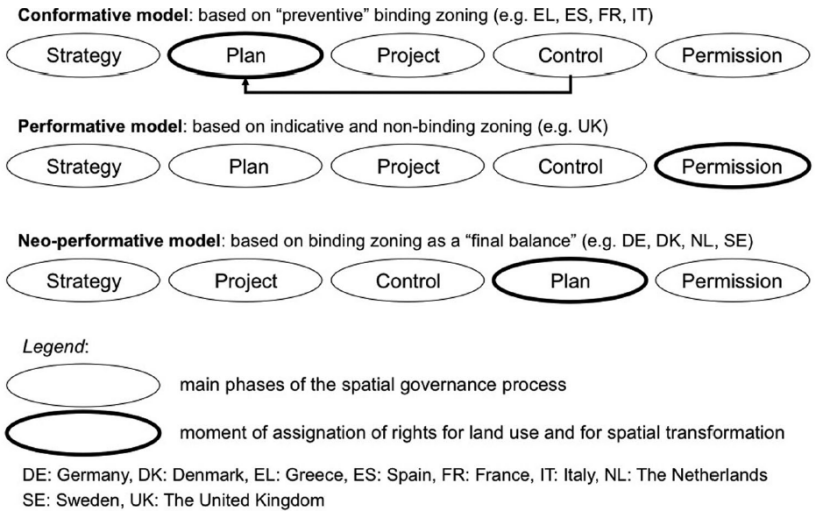


Figure 5: Three models of spatial governance systems 1 (Janin Rivolin 2017: 14, an adaptation of Knieling et al. 2016)

As shown by Muñoz Gielen & Tasan-Kok (2010), in plan-led systems (i.e. the conformative model), land use regulations and zoning should be legally binding prior to interested developers finding out if their intentions are in conformance with the regulations. Therefore, approval is granted for binding zoning plans in the early planning stages, before the development moment, creating certainty about future development possibilities. On the other hand, in development-led systems (i.e. the performative model), even though indicative zoning plans might be present in the early stages, the approval of legally binding land use rules should be granted after the successful conclusion of negotiations and the drawing up of a development agreement. The implication is that, while theoretically plan-led systems provide more certainty, development-led systems lead to more flexibility. However, Muñoz Gielen & Tasan-Kok (2012: 1100) have shown that some other systems (i.e. the neo-performative model), "which theoretically have plan-led planning systems, show characteristics more similar to development-led planning, [because] the legal certainty that could be created by these early zoning plans is in practice not as strong as might be expected".

For example, Dutch municipalities generally grant approval for indicative zoning plans, which may be created specifically for a particular site or applied to all the municipality, creating more certainty as regards future construction possibilities. Therefore, in practice the use of "binding land-use plans seems to be different from how it should be in theory" (*ivi*). Indeed, countries operating with rigid plan-led systems generally incorporate flexibility, while countries operating in development-led systems seek to provide greater certainty (CEC 1997: 45). Moreover, planning systems are strongly influenced by external economic, environmental and social changes. The Dutch case (Buitelaar & Bregman 2016), for example, demonstrates that even if a planning culture might be strongly institutionalized and highly considered in terms of its practice, it may nevertheless be vulnerable when faced by radically changing circumstances. Buitelaar & Bregman (*ibid.*: 1281) suggest that "organic forms of urban land development, with an open-ended plan, a greater role for smaller private actors and an enabling role for government, are better at allowing for adapting to changing circumstances".

4.2 Structure of the Swiss planning system

The Swiss Confederation is the official name of Switzerland (*Schweiz* in German, *Suisse* in French, *Svizzera* in Italian and *Svizra* in Romansh), a federal republic of 26 cantons where the city of Bern is the capital of the federal authorities. Historically, the Swiss Confederation was created as an alliance among the valley communities of the central Alps, with the aim of facilitating the management of common interests (e.g. free trade) and ensuring peace through the important mountain trade routes. The establishment of the Swiss Confederation is dated to 1 August 1291, when the Federal Charter was agreed between the rural cantons of

Uri, Schwyz, and Unterwalden. The Swiss Confederation has had a long history of neutrality, since it has not been involved in a war since 1815. Nevertheless, it pursues an active foreign policy and became a full member of the United Nations in 2002 after a popular referendum. It hosts the UN office in Geneva, as well as a number of other international organisations (International Labour Organisation – ILO, World Trade Organisation – WTO, Organisation for Economic Cooperation and Development – OECD etc.). At a European level, it was a founding member of the European Free Trade Association (EFTA) and it is part of the Schengen Area, even though it is not a member of the European Union, nor of the European Economic Area.

Figure 6: Geophysical map of Switzerland (available at: <http://www.cittacapitali.it /europa/svizzera/cartina-svizzera.htm>, accessed on 3 January 2018).

In geographic terms (see figure 6), Switzerland's position is central in Europe and it has borders with five countries (Italy, France, Germany, Austria and Liechtenstein). Nevertheless, the central position and great accessibility of Switzerland mean that it has to share many environmental pressures, for example traffic congestion (OECD 2002: 39), with its neighbours. Switzerland is also a compact country in terms of geographical extent (41,400 km^2) and structure (table 8 below). Yet, although it has a small surface area, infrastructure development and territorial management are complicated by the country's terrain. Its mountains include the Alps and the Jura and its lakes are some of Europe's largest. Together the mountains and the lakes occupy a considerable part of the country's territory, while the Swiss population of around 8 million people generally live on the Plateau, where the biggest cities are situated. Thus, settlement areas comprise only 7% of the land, whereas 56% is considered inhabitable. Moreover, there is comparatively little arable land in Switzerland, with grasslands covering twice to three times as much area as farmland and forest areas, which extend over one-third of the territory. Issues related to the efficient management and use of land are in any case very important for Switzerland, given the considerable variations in size and land use patterns between the different cantons. Indeed, while cantons

like Geneva and Basel are highly urbanised, over half the surface area in five cantons (Fribourg, Appenzel Ausserrhoden, Appenzell Innerrhoden, Thurgau and Luzern) consists of agricultural land, and two cantons (Valais and Uri) have largely unproductive land. "Such territorial diversity can be to a country's advantage, but the distribution of responsibilities and resources among heterogeneous cantons can also become a sensitive policy issue, especially when it is linked to institutional fragmentation" (OECD 2002: 40).

Strong internal dichotomies and territorial fragmentation are at the core of the structure of the Swiss federation and, to a certain extent, "structural and spatial divisions are the essential ingredient of the Swiss variant of federalism and stay at the heart of the significant power of the subnational entities" (OECD 2002: 25-26). In fact, differences in cultural values and behaviours in the various cantons are more evident than economic disparities (e.g. GDP per capita) and this can be historically traced in the evolution of the Confederation in the past centuries (i.e. since the sixteenth century Reformation). These cultural divisions can be easily observed in the linguistic divisions of the cantons, since Switzerland is not a nation based on a common ethnic or linguistic identity. Today the country has German, French, Italian and Romansh speaking parts, which form reasonably homogeneous areas in terms of territory, but which, however, do not coincide with the cantonal borders. In fact, the linguistic borders of various territorial areas also do not coincide with municipal boundaries. Moreover, the mixture of the population in Switzerland has been determined by migratory movements. In any case, the people's strong sense of belonging to the country is based on their shared historical background, their common values (such as federalism and direct democracy) and Alpine symbolism. Other cultural divisions are due to the split between urban and rural areas, which in recent years has been increasing, creating some tensions within the cantons. Indeed, since the nineteenth century, in particularly between 1950 and 1970, a strong urbanisation and industrialisation process has marked the demographic and economic differences between the urban and the rural areas.

Today, the current political, economic and social challenges have to be handled carefully in order to guarantee the country's homogeneous growth, without overlooking its peripheral areas. According to the 2002 OECD Territorial Review on Switzerland, "spatial differences in cantonal and federal voting behaviour, particularly in areas such as ecological and social issues, or openness towards Europe, cannot be attributed to general framework conditions but to cultural differences only" (OECD 2002: 26). However, the Swiss Confederation's structure has enabled it to manage and mediate these potential cultural fragmentations, through the creation of a decentralised decision-making process and the use of direct democracy. In fact, no single territorial block or population seems to have emerged to over-dominate the other groups, as a result of a long historical and political process aimed at a carefully balanced representation of interests. Thus, the term 'national cohesion' is extremely important since it tries to

cover cultural, social and economic aspects, as well as dealing with multicultural and multilingual tensions. Indeed, according to the OECD (*ibid.*: 26), the concern for spatially balanced development and national cohesion could well have prevented major territorial reforms: Switzerland did not participate in Southeastern Europe's regionalisation movement, nor did it introduce the local level reforms that in Central and Northern Europe led to redesigned municipal structures.

Table 8: Swiss structural organisation (author's own)

	number	**NUTS level**	**comment**
national level	1	NUTS-1 CH0 - Switzerland	
regional level	7	NUTS-2 CH1 - Région Lémanique CH2 - Espace Mittelland CH3 - Nordwestschweiz CH4 - Zürich CH5 - Ostschweiz CH6 - Zentralschweiz CH7 - Ticino	They do not, however, constitute administrative units and are mostly used for statistical and economic purposes. The most important sub-national units are the cantons.
cantonal level	26	NUTS-3 CH11 - Vaud CH12 - Valais CH13 - Genève CH21 - Bern CH22 - Freiburg CH23 - Solothurn CH24 - Neuchâtel CH25 - Jura CH31 - Basel-Stadt CH32 - Basel-Landschaft CH33 - Aargau CH40 - Zürich CH51 - Glarus CH52 - Schaffhausen CH53 - Appenzell Ausserrhoden CH54 - Appenzell Innerrhoden CH55 - St. Gallen CH56 - Graubünden CH57 - Thurgau CH61 - Luzern CH62 - Uri CH63 - Schwyz CH64 - Obwalden CH65 - Nidwalden CH66 - Zug CH70 -Ticino	

district level		LAU1	They only exist in some cantons since the latter are free to decide on their internal organisation. A quarter of the cantons have no districts, so this level is not taken into consideration.
municipal level	2,222	LAU2	

4.2.1 Structure and division of powers

As already mentioned, Switzerland is a federal republic and has three main levels of government, each involved in planning: the national or confederation level, the cantonal and the local level (see table 9). However, "although spatial development processes have changed over the years, the territorial institutions have largely remained the same. There is thus an increasing mismatch between political division and socio-economic reality, particularly in metropolitan areas" (OECD 2002: 27-28).

Table 9: The organisation of government on the three levels (author's own)

Level	**Key Institutions**
national	Bundesrat (parliament) Bundesverwaltung (federal administration) Federal Department of the Environment, Transport, Energy and Communications (DETEC) Federal Office for Spatial Development (ARE) Federal Committee for Spatial Development (ROR)
cantonal	26 federal member states Each canton has its own parliament, government, constitution and laws Cantonal planning departments
local	2,222 municipalities (01.01.2018) Municipal planning departments

4.2.2 The national level

Switzerland is a Confederation with strong democratic traditions: governments, administrations, parliaments and courts are organized and managed at the three political levels. The competences of the federal authorities are restricted to a minimum and there are frequent referendums at the national, cantonal and communal levels. The federal government coordinates its own activities and the planning at the cantonal and municipal levels, to which many competences are delegated.

At the national level, the people are represented by the federal parliament, the Federal Assembly (*assemblea federale* in Italian, *assemblée fédérale* in French,

Bundesversammlung in German), which has legislative power. Like other federal countries, there is a two-chamber federal parliament in Switzerland. One chamber represents the population and the other the federal states. The National Council (*consiglio nazionale* in Italian, *conseil national* in French, *Nationalrat* in German) is similar to the US House of Representatives and represents the population; it consists of 200 members who are elected every four years, using a complex electoral system, which ensures the proportional representation of political parties. Because each canton is a constituency and because there are great differences in the numbers of inhabitants in the cantons, some of the larger cantons have many more seats than some of the smaller ones. Thus, the proportional representation is not absolute. The Council of States (*consiglio degli stati* in Italian, *conseil des états* in French, *Ständerat* in German), similar to the US Senate, represents the cantons and, with two members for each full canton and one for each half canton, has 46 members. The election of the members follows cantonal legislation rules and so can vary among the cantons. The cantons take the decisions regarding their cantonal constitution, their representatives and the length of their terms of office. In the majority of the cantons, the members of the Council of States are elected every four years in an election held on the same day as the election for the National Council. Both parliamentary chambers meet several times every year and choose various parliamentary commissions.

The Swiss federal government is the Federal Council (*consiglio federale* in Italian, *conseil fédéral* in French, *Bundesrat* in German). Interestingly, although the German name *Bundesrat* is also used in Austria and Germany, it has a different meaning in those countries, which can create confusion. The government has seven members who are usually elected every four years; soon after the parliamentary elections the two chambers of the federal parliament meet together as the Federal Assembly. The term of office does not have a legal limit and some federal councillors have been in office for more than twenty years. Each member of the government acts as head of one of the federal administration's departments. However, all important government decisions are made, either by consensus or through a majority vote by all seven members, in weekly government conferences.

The Swiss federal administration (*amministrazione federale* in Italian, *administration fédérale* in French, *Bundesverwaltung* in German) is made up of a number of agencies that, together with the Swiss Federal Council, form the executive branch of the Swiss federal authorities. The administration is responsible for executing federal law and it also prepares draft laws and policy for the Federal Assembly and the Federal Council. The administration consists of seven federal departments (table 10) together with the Federal Chancellery. The departments are:

Table 10: The seven federal departments (author's own)

Department	Acronym
Federal Department of Foreign Affairs	FDFA
Federal Department of Home Affairs	FDHA
Federal Department of Justice and Police	FDJP
Federal Department of Defence, Civil Protection and Sport	DDPS
Federal Department of Finance	FDF
Federal Department of Economic Affairs, Education and Research	EAER
Federal Department of the Environment, Transport, Energy and Communications	DETEC

The departments are similar to the ministries of other countries, but generally they have a broader scope. There are various federal offices in every department, each with its own director, and also other agencies. The federal department which is strongly linked to the good functioning and management of planning is the Federal Department of the Environment, Transport, Energy and Communications (DETEC, table 11), which includes the following offices:

Table 11: The Federal Department of the Environment, Transport, Energy and Communications (author's own)

Office	Acronym
Federal Office of Transport	FOT
Federal Office of Civil Aviation	FOCA
Federal Office of Energy	FOE
Federal Roads Authority	FEDRO
Federal Office of Communications	OFCOM
Federal Office for the Environment	FOEN
Federal Office for Spatial Development	ARE

The DETEC's strategy is reviewed every four years and revised where necessary. In its 2016 update, the DETEC formulated new challenges and set out the main objectives to be achieved before 2030, delineating specific measures for the period up to 2019. This strategy forms an orientation framework and communication basis across all the divisions and sections of the DETEC.

Much of the information presented in this section is widely available in Swiss government and official sources, for example the website of the Swiss Federal Office for Spatial Development (ARE, <http://www.are.admin.ch>), which is the federal government's agency responsible for issues regarding spatial development, transport policy and mobility, sustainable development and international cooperation in spatial planning matters. It is attached to the DETEC. The ARE was created in 2000, bringing together the activities of the Federal Office of Spatial Planning, the Bureau for Transport Studies, sustainable development and the Alpine Convention. It works alongside Switzerland's cantons and communes, and also takes the lead on international cooperation in

spatial planning matters. In its work, the ARE pursues the vision that space in Switzerland should be managed sustainably, and that the ARE should play a key part in guiding this development. The ARE's mandate (<www.are.admin.ch>) includes the following:

1. drafting principles and strategies for spatial, transport and sustainable development;
2. ensuring that political plans that affect space and transport are coordinated within the federal government;
3. input into the planning of urban centres and agglomerations, as well as compensatory measures in rural areas;
4. responsibility for international cooperation on the regulation of spatial planning and transport;
5. alongside the cantons, responsibility for the legal supervision of spatial planning;
6. responsibility for ensuring that the federal government's activities observe the principles of sustainability.

The Federal Office for the Environment (FOEN, <http://www.bafu.admin.ch/org/index.html?lang=en>) is the federal environmental authority and its aim is to make sure that natural resources, such as water, soil, air, quietness and forests, are used sustainably. It is in charge of minimising natural hazards, reducing risks to the environment and human health from excessive pollution, conserving biodiversity and landscape and representing Switzerland in international environmental policy arenas.

Since spatial planning is not solely the Confederation's responsibility but a complex activity that involves various actors, the Federal Committee for Spatial Development (ROR – *Raumordnungsrat* in German, *Conseil de l'organisation du territoire* in French, and *Consiglio per l'assetto del territorio* in Italian, see <https://www.are.admin.ch> for more details) was established on 2 June 1997. The ROR is a permanent extra-parliamentary commission, which advises the Federal Council and the administrative units responsible for regional policy and territorial development, such as the ARE, on spatial planning policy and issues. In this context, the Swiss Territorial Project (4.3.1) is of fundamental importance. Every third year of the legislature, the ROR sends a report to the Federal Council concerning the macro trends of territorial development in Switzerland.

At the national level, spatial planning sets out strategic guidelines and programmes (table 12) and coordinates the planning of important infrastructural projects, for example motorways and railway lines of national interest. Yet, spatial planning is an interdisciplinary activity, which is also carried out by other actors. The oldest and most important professional association in the field of land use planning in Switzerland is the Swiss Spatial Planning Association (VLP-ASPAN). The association was founded in 1943 and is supported by the Swiss

Confederation, cantons, municipalities, as well as other experts in the field (<http://www.vlp-aspan.ch/de>).

Table 12: National spatial planning in Switzerland (based on OECD 2002: 92)

Ministry in charge	**Legal basis**	**Responsibility of national government**	**National strategies for spatial planning**
Federal Office for Territorial Organisation, ARE	Loi federal sur aménagement du territoire (Spatial Planning Law, 1979)	Undertake basic studies, establish concepts and sectoral plans, vertical and horizontal coordination, approve cantonal guiding plans	In 1996, the federal government published the Swiss Planning Policy Guidelines

As observed by the OECD (2002: 91), Switzerland and some other countries (Austria, Germany and France) "have attempted to integrate social, economic and environmental goals into spatial planning on national and cantonal/regional levels." Indeed, Switzerland's neighbours except for Italy seem to have established national plans or policy guidelines (*ivi*). Yet, even though the functions of these policy documents vary in the different countries, the main policy goals are defined largely along the same lines (*ibid.*: 91-94). In fact, the visions of territorial development of the OECD member countries generally converge (e.g. sustainable development, economic efficiency and disparity reduction).

4.2.2.1 The legal basis for spatial planning

The Federal Law on Spatial Planning (22 June 1979) and Article 75 of the Federal Constitution (18 April 1999) are the legal structure of the territorial development of the country.

The Federal Law on Spatial Planning (RPG), was passed on 22 June 1979 and came into force in 1980. The RPG (status as of 1 January 2016) does not define the term spatial planning, yet, article 1 sets out the aims of the Law:

> *The Confederation, cantons and communes ensure that land is used with moderation and the building areas are separated from non-building areas. They coordinate their activities which affect land and order the settlement in view of an harmonious development of the country. They shall take into account the natural conditions, as well as the needs of the population and the economy.*

It therefore aims to achieve an efficient and sustainable use of the limited land space, to coordinate the activities of the federal, cantonal and communal authorities and to orientate actions towards the desired spatial development. Thus,

the Federal Law promotes a careful management of land in Switzerland, in order to limit the urban sprawl expanding into the scarce resource of open land, also by strictly separating built areas from non-built areas (OECD 2002: 86). In fact, the leading philosophy of spatial planning is moving towards achieving 'decentralised concentration' (see 4.3 below), therefore maintaining a clear separation between open space and settlements and thus conserving open space. However, there seems to be no law specifically concerning rural area planning to control building outside construction zones, apart from certain regulations in the Spatial Planning Law (*ivi*).

There have been some revisions of the 1979 Federal Law on Spatial planning (in 1995, 1998, 2003, 2007, 2013). On 3 March 2013, the Swiss population was called to vote on whether to limit building land, tightening the Federal Law on land use. These changes to the law would require cantons and communes to reduce the amount of land allocated for building, which previously had been measured too generously, and to compensate the owners. The referendum led to the partial revision of the Federal Law on Spatial Planning, which is discussed in more depth in section 4.4.1 below. The Federal Government has further proposed a second phase to the revised Law, and is drawing up a project together with the cantons and municipalities, gradually involving other interested groups. The preliminary consultations ended in 2015 and in June 2017, given the strategic importance of the proposals and issues involved, the Federal Council took the decision to initiate a further round of consultations. The Federal Law on Spatial Planning (RPG) in 1979 also required the cantons to regulate settlement developments better, since there had been a poorly managed urban development in the past. Nevertheless, most of the cantons did not really implement the proposed measures; as a result today there are serious challenges related to the changing nature of the rural communities.

Moreover, the responsibility for the coordination and approval of cantonal spatial planning was transferred to the ARE by the same Federal Law of 1979, putting it in charge of federal spatial planning policy. "Initially, spatial planning was restricted to physical land use, but soon it became a more encompassing policy dealing with all aspects of life that had a territorial impact" (OECD 2002: 86). Spatial planning therefore began to expand its remit and today it involves a wide variety of key aspects of environmental and landscape protection, urban and rural development and land use.

The Federal Constitution was adopted by popular vote on 18 April 1999, replacing the previous Federal Constitution of 1874. In particular, section four (articles 73-80) of the Federal Constitution of the Swiss Confederation (status as of 1 January 2016), focuses on the environment and spatial planning. Article 75 states that:

1. The Confederation shall lay down principles on spatial planning. These principles are binding on the Cantons and serve to ensure the appropriate and economic use of the land and its properly ordered settlement.
2. The Confederation shall encourage and coordinate the efforts of the Cantons and shall cooperate with them.
3. Confederation and Cantons shall take account of the requirements of spatial planning in fulfilling their duties.

With this article, responsibility for framework spatial planning legislation was transferred to the Confederation. As stated in the Constitution, the federal government promotes and coordinates its own activities and the planning at the cantonal level, by approving cantonal guiding plans and sectoral strategies and plans. As regards legislation, the Confederation is limited to laying down general principles, which regard the tasks and issues of spatial planning at the various governmental levels. This federal framework legislation takes into account the needs and demands of spatial planning from the lower levels, due to the use of referendums and direct democracy.

As stated in the Federal Law on Spatial Planning, the Confederation has the important role to manage Swiss land in an efficient way. Federal law principles strictly separate zones for building from zones which are not for building, even though exceptional permissions for construction outside building zones may be given. Moreover, the Confederation may decide to regulate in more detail particularly important areas for the growth of the country. Yet, the practical implementation of spatial planning is a task that remains under the responsibility of the cantons, which also often delegate various planning tasks to the local authorities.

However, in actual fact the reality of Swiss spatial planning is less simple than is stated in article 75 of the Federal Constitution, since the Confederation, cantons and communes have joint responsibility for guaranteeing sustainable land use. This is achieved through the harmonization of their activities which have spatial impact and "implementing planning which is orientated towards the desired development of the country" (Muggli 2004: 2-3, ISOCARP 2004: 5).

Historically, the cantons and communes were responsible for planning which led to a very diverse body of laws and instruments with marked variation between the regions. Federal responsibility was limited to the landscape and nature protection. Since legislative changes in 1979 (Federal Town and Country Act, 22 June) and 1983 (Federal Environment Protection Act, 7 October), the cantons are still responsible; however, all now have to refer to an identical set of federal laws, to which their legislation and special procedures have been adapted.

4.2.2.2 Legal basis for participation in planning processes

As regards the constitutional and legal framework for spatial planning, the Swiss system of direct democracy envisages considerable participation by citizens in planning procedures, e.g. art. 4 (information and participation) of the Federal Law on Spatial Planning of 22 June 1979 (status as of 1 January 2016) declares:

> *1. The authorities responsible for planning tasks should inform the population about the purposes and the development of the planning provided in this law.*
> *2. They shall provide for adequate participation of the population in the planning process.*
> *3. The plans provided for this law are public.*

Article 4 is further discussed in chapter four (4.3.1) and chapter five (5.3.1.5). It is also worth repeating that, although Swiss citizens are strongly involved during the planning process, a large number of the country's residents are not able in some areas to participate and vote in referendums because they are not Swiss citizens, see 2.3.3. Nevertheless, "all residents, including those without political rights, can participate in a citizens' forum and consultations" (Urban Audit 2016: 23).

4.2.3 The cantonal level

The Swiss Confederation consists of 26 federal member states (figure 7, table 13), the cantons, which are fully sovereign territories with a permanent constitutional status and a high degree of independence. For historical and geographical reasons the self-governing cantons differ widely from each other. However, all the cantons have equal status under the Federal Constitution. Moreover, every canton has its own constitution (approved by the federal parliament), its own parliament (with about 100 members), government, courts and laws (which have to be compatible with those at a federal level). Each canton has considerable liberty in legislation and power to veto political reforms: they can veto constitutional changes and the introduction of new laws, even though they cannot modify existing federal laws. Thus, the cantons have wide powers in decision-making and they may also propose equalizing reforms if they consider that disparities are creating inequality. Indeed, they can even block decisions that might increase disparities between them. Political reforms can be challenged even by a minority of the population if the minority feels that its position will be weakened as regards the national average. So, since the cantons exercise a large amount of influence on decision-making at the federal level, it is clear that territorial disparities have an important role in Swiss politics. Indeed, according to the OECD (2002: 28), "the public debate is more concerned with territorial disparities (i.e. differences across subnational units) than with social disparities (i.e. differences across individuals)".

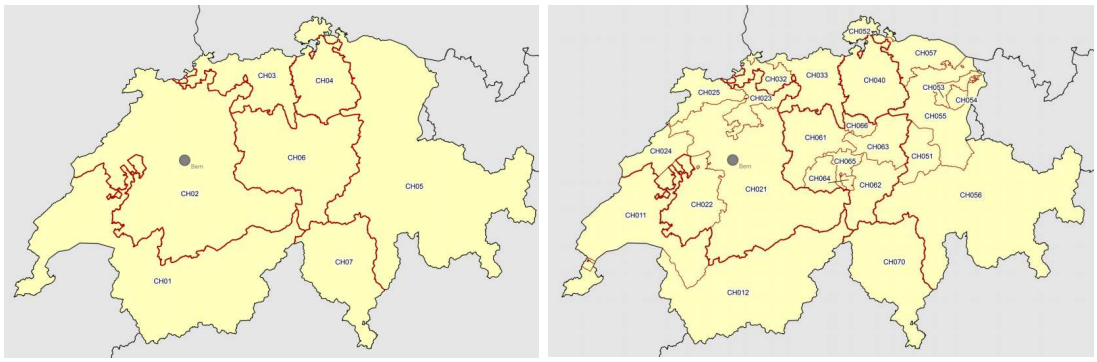


Figure 7: Statistical levels NUTS-2 and NUTS-3 in Switzerland, 14 July 2016 (Eurostat) <http://ec.europa.eu/eurostat/documents/345175/7773495/CH.pdf>

The term canton derives from Middle French, meaning 'edge' or 'corner' and also refers to political territories. The people elect the cantonal governments which consist of between five and seven members. The cantonal parliaments may have different names in the various cantons and have a single chamber. According to the Federal Constitution, twenty of the twenty-six cantons are full cantons, whereas the remaining six are half cantons because their origins stem from internal divisions: the canton of Appenzell was divided into Ausserrhoden and Innerrhoden at the time of the Reformation in 1597; the city part of Basel (Basel-Stadt) and the rural part (Basel-Land) divided in 1833 because of a dispute over equal rights; and Unterwalden separated into Obwalden and Nidwalden in 1803 (Bewes 2012: 208). These half cantons have a similar internal autonomy to the full cantons. Yet, the voting rules are different: while full cantons have two seats in the Senate, half cantons only have one, and in cases where constitutional changes have to be approved by a majority of cantons in popular votes, they only have half a vote. Moreover, while a few smaller cantons (in fact just two, Appenzell Innerrhoden and Glarus, see *ibid.*: 83) can still call their electorate to assemblies (*Landsgemeinde*) to discuss and vote on cantonal matters by raising their hands (*ivi*), this cannot be done in bigger cantons (e.g. Zurich), since it would be impracticable.

Some cantons officially call themselves republics, such as the Canton of Geneva which is also known as the *République et Canton de Genève* (Republic and Canton of Geneva). Most of the French speaking cantons (e.g. Jura, Neuchâtel, Valais, Vaud and Ticino) use this terminology.

Table 13: The current Swiss cantons (author's own, * half cantons)

Cantons	
Aargau (AG) CH33	Nidwalden (NW)* CH65
Appenzell Ausserrhoden (AR)* CH53	Obwalden (OW)* CH64
Appenzell Innerrhoden (AI)* CH54	St. Gallen (SG) CH55
Basel-Land (BL)* CH32	Schaffhausen (SH) CH52

Basel-Stadt (BS)* CH31	Schwyz (SZ) CH63
Bern (BE) CH21	Solothurn (SO) CH23
Fribourg (FR) CH22	Thurgau (TG) CH57
Genève (GE) CH13	Ticino (TI) CH70
Glarus (GL) CH51	Uri (UR) CH62
Graubünden (GR) CH56	Vaud (VD) CH11
Jura (JU) CH25	Valais (VS) CH12
Luzern (LU) CH61	Zug (ZG) CH66
Neuchâtel (NE) CH24	Zürich (ZH) CH40

The cantonal level holds the central instruments and tools of spatial management in Switzerland. Due to a strong territorial fragmentation, each canton has developed its own legislation in accordance with its own particular circumstances (e.g. topography, resources). However, the cantons coordinate spatial planning in relation to federal law principles: all planning is subject to the plans at the national level. The main cantonal planning instruments are the Cantonal Structure Plans, which must respect the provisions of the Federal Law on Spatial Planning (see section 4.3.2 below). The responsibility for planning land use development in more detail lies with the cantons, in certain cases in cooperation with the neighbouring cantons. In fact, larger projects require the coordination of all the cantons involved and, in some cases, also that of the federal government.

As mentioned above, every canton (table 13) is able to choose its own internal organisation. Moreover, a variety of structures (and terminologies) exists for the the districts, which are the entities between the cantons and municipalities. The districts generally have only an administration and court organization. However, due to historical factors, in the cantons of Graubünden and Schwyz, the districts have their own legal entities and often have their own assemblies (*Landsgemeinde*, explained above). Recently, a number of cantons (e.g. Bern) have been considering whether to abolish or reduce the district level (see table 8 above) in the future.

4.2.4 The local level

The self-governing cantons are divided into districts, as explained above (table 8, section 4.2), which are further subdivided into communes (similar to townships or municipalities). At the local level, Switzerland is currently divided into 2,222 communes (<https://www.atlas.bfs.admin.ch/maps/13/fr/12876_229_228_227/21239.html>, accessed on 5 January 2018), even though the number is decreasing, as a result of a current trend to merge smaller communes into larger entities (on 1 January 2016 there were 2,294 communes). Although the decrease is not specifically linked to the NRP, it might be a long-term effect of the intended mutual learning process (Ache et al. 2007: 269). However, this trend is often seen as controversial and has created some opposition at a local level.

Like at the federal and cantonal levels, citizens benefit from political rights and direct democracy also at the local level, where communes have a high degree of autonomy and are governed by elected representatives. Depending on the canton, communes have widespread discretionary powers on the implementation of the decisions of higher-level governments. For example, they have decisional powers as regards matters of transport, health, education and public security, and are responsible for collecting taxes. Nevertheless, as Van Den Berg (2008: 50) points out, "many (small) municipalities and many cantons act relatively independently resulting in different aims, opinions and culture. The power is extremely fragmented which limits inter-communal, inter-cantonal and cross-border problem solving".

Generally, communes are governed by a municipal (communal) council, which is headed by a mayor with executive powers. Assemblies are held annually in most communes where citizens may vote (also by post) on issues put before them. Bigger municipalities have their own parliaments and local laws (e.g. concerning water and energy prices) and are governed by elected representatives in a municipal council. Interestingly, the city of Lucerne has also set up a children's parliament which even has its own symbolic budget (*Kinderparlament der Stadt Luzern*, <www.kinderparlament.ch>), so that even the children can begin to learn about the democratic processes.

Table 14: Sub-national spatial planning in Switzerland (based on OECD 2002: 93)

Strategic plans at the level of subnational government	**Planning at municipal level**	**Interministerial body**	**Deliberative bodies/Expert groups**
Cantons establish cantonal guiding plan (Plan for infrastructure development and land use)	Municipalities establish land use plans	The Federal Conference on Territorial Organisation (*Raumordnungs – konferen des Bundes*)	The Advisory Council on Territorial Organisation

In short, there is a strongly developed municipal federalism in the Swiss cantons and most of them delegate land use planning to the local level, creating a sense of self-reliance and responsibility which is widespread across the population. Thus, at this level, land use planning in a narrower sense is performed and municipalities are authorised to plan the urban development of their communities. Yet, urban planning is still subject to the planning decisions taken at the cantonal and national levels, which give directives to the communes and approve their plans. The main local planning instruments are the land use plans (table 14), which must meet provisions of the Federal Law on Spatial Planning (see section 4.3.3 below).

4.3 Planning tools, between tradition and innovation

Spatial planning methods and issues have changed considerably during the years. This section aims to present the evolution of Swiss legislation on spatial development at a federal, cantonal and local level, providing the opportunity to understand its complex multilevel structure. Keller & Blaser (2007), following Meier (2005), divide the modern era of spatial planning in Switzerland into four main phases: the preliminary phase, before World War I; the transitional phase, between World War I and II; the institutionalisation phase, from World War II till the 1980s; and the consolidation phase, from the 1980s to the present. Their delineation of the four phases is presented below.

In the 'preliminary phase', urban and cantonal planning mainly focused on local situations, without taking the larger context enough into consideration. In fact, outside the urban areas, planning interventions essentially focused on land, forestry and infrastructures.

It was in the 'transitional phase' that spatial planning acquired more importance at a national level. The previous uncontrolled and unsustainable urban development was challenged and people started to understand the importance of land and landscape as scarce resources, requiring conservation and management. Debates also started to highlight the future of agriculture. In this phase, the first plans and concepts (table 15) addressing spatially comprehensive themes came into being:

Table 15: Spatial planning in Switzerland: timeline 1 (based on Keller & Blaser 2007)

1915	International Ideas Competition for Zurich and its Periphery presented its first proposal for a city-region
1920	Association of Swiss Street and Transportation Professionals developed its first design for a national highway system
1920	Prof. Hans Bernhard developed the first planning approaches, proposing a clear division between rural and urban-industrial settlement areas
1926	City of Winterthur enacted the first land use zoning plan of Switzerland
1928	CIAM (*Congrès international d'architecture moderne*) discusses an Urban Programme (*Programme d'Urbanisme*), in which planning was not limited to the city, but extended to include the entire landscape
1930s	First regional planning groups were founded
1933	Armin Meili developed a proposal for a national settlement model of Switzerland
1937	First cantonal plan was presented in Geneva
1937	Architects and public authority representatives established the Swiss National Planning Commission, a Task Force for National Planning was set up at the ETH in Zurich
1939	Swiss National Exposition fostered the notion by providing a special category for urban and spatial planning

In the 'institutionalisation' phase spatial planning matured. During the Second World War, the term 'plan' had a negative reputation since it was commonly associated with the idea of a planned economy (*Planwirtschaft* in German). However, thanks to the *Wahlen Plan* (a cultivation plan to ensure food self-sufficiency), the concept started to gain positive valence. Consequently, tasks for developing the main basis of national spatial planning were assigned by the Federal Department of the Military. Following a federal resolution of 1942, measures to reduce unemployment were faced by national spatial planning. This was the context for the first reference to spatial planning in national law.

After the war, spatial planning in Switzerland was not able to respond efficiently to the rapid expansion of urban settlement areas and the building boom, and as yet there was no legal framework, with a clear definition of the roles of the federal, cantonal and communal governments as regards spatial planning. Nevertheless, the results of the previous 'laissez-faire' policy demonstrated the need for planning to supervise the urban and rural growth. As a result, spatial planning gained more importance and in the 1960s became a national issue (table 16), with permission being given to the public authorities to improve infrastructure. Keller & Blaser (2007: 3) note that "as a result, planning horizons were lengthened to cover longer time-spans and larger territories, and planning's core competencies clearly expanded in the direction of comprehensive or overall planning".

Table 16: Spatial planning in Switzerland: timeline 2 (based on Keller & Blaser 2007)

1942	First conference for national spatial planning was held at the ETH Zurich
1943	Swiss Association for Spatial Planning (VLP-ASPAN) was founded
1943	Centre for Spatial Planning was founded at the Geographical Institute of the ETH Zurich, headed by the geographer Prof. Gutersohn
1946	Centre for Spatial Planning became the Institute for Spatial Planning
1961	Institute for National, Regional, and Local Planning (ORL Institute) was founded at the ETH Zurich

Between the 1960s and the 1970s, the Federal Government developed the Swiss National Development Concepts (ORL-Institut 1971, table 16), designing varying spatial concentrations for the country (*ivi*). The directors of the major federal departments used these models to develop the first National Spatial Planning Concept CK-73 (DRP 1974), which promoted the important concept of 'decentralised concentration' (i.e. a territorial organisational pattern with an even distribution of economic activities and population throughout the country, but with development concentrated in the settlements), which designated a hierarchically structured approach to planning (OECD 2011: 92). In these years, spatial planning legislation developed and increased its activity (table 17). In 1969, the task of spatial planning was assigned by the Federal Constitution to the cantons (Muggli 2004: 2). Spatial planning's goal focused on the economical

dimension of land use and a well-organized settlement of the country, which was politically achievable by guaranteeing private land ownership rights. The Federal Law on Spatial Planning, also known as the Federal Act on Spatial Planning (*Bundesgesetz über die Raumplanung* – RPG, table 17), took effect only in 1980, as seen above (4.2.2.1), also attempting to promote a more sustainable and efficient use of land. However, the most challenging spatial planning issues still needed solving through emergency means (e.g. the 1972 Federal resolution on urgent spatial planning measures). In the following years, this legal foundation provided the basis for spatial planning's rapid institutionalisation in the federal, cantonal and local levels, as well as intense planning activities. The principal task was how to deal with expected growth in as rational a way as possible. Nevertheless, since it was politically impossible to enforce existing planning concepts and also due to problematic execution issues, there was no overall target for spatial development (BRP [ARE] 1987). Indeed, it would seem that a number of the cantons and communes had not exercised enough restraint as regards spatial planning policy in recent decades, and that consequently too much land was allocated for building.

Table 17: Spatial planning in Switzerland: timeline 3 (based on <http://www.darum-raumplanung.ch/en/spatial-planning/history/>)

1876	Federal Law on Forests and Woodlands
1933	Essay by Armin Meili: On the Subject of Land Use Planning
1942	Symposium on Land Use Planning at the Federal Technical University of Zurich
1943	Foundation of the *Vereinigung Landesplanung Schweiz* VLP-ASPAN
1954-1959	Federal Highway Plan
1963	Typhus epidemic in Zermatt provided impetus for general sewage and drain system projects
1963	Land rights initiatives and federation of trade unions
1965	Federal law on measures regarding advancement of residential construction
1969	Constitutional article on spatial planning
1969-1971	Drafting of spatial planning guidelines by the ORL-institute, ETH Zurich
1972	Federal ruling regarding urgent measures concerning spatial planning
1976	Vote on first draft on spatial planning law of 4 October 1974 rejected
1980	Federal Law on Spatial Planning of 22 June 1979 comes into force
1987	Report on spatial planning by the federal council
1996	Basic intentions and outlines of spatial planning in Switzerland set out
2001	Report on agglomeration policy by the federal council
Since 2004	Agglomeration programmes
2005-2010	Drafting of spatial development concept for Switzerland
2008	Formation of the landscape initiative
Since 2010	Partial revision of spatial planning law
2012	Second home initiative adopted

2012	Spatial development concept for Switzerland ready for political resolution
2013	Referendum on land use
2014	Partial revision of the 1979 Federal Law on Spatial Planning came into force
2016	Legislation restricting the building of second homes comes into force

Since the 1980s, during the 'consolidation phase', the Federal Government has assigned to the Federal Office for Spatial Development (ARE) the task of formulating national visions. "In the face of [growing] decentralisation and globalisation trends, a territorial vision was lacking as a starting point for discussions to ensure flexible policy-making by regions and through interregional cooperation" (OECD 2002: 89). The creation of national conceptual guidelines, together with more strategic planning, was thus a major requirement. As a result, the Federal Council published the Swiss Planning Policy Guidelines, the first federal policy guidelines for territorial organisation, in 1996 (table 17). Their principal goal was to delineate "a long-term spatial vision for Switzerland and the main challenges [in order to achieve] efficient land use and a balanced development of all parts of the country" (*ivi*). In fact, the guidelines proposed a renovation of the urban centres and emphasised the need for a more rational land use, restricting disordered urban sprawl and setting up urban-rural networks among neighbouring small and medium-sized towns. Previously, the federal government had not intervened much in urban issues, even though there was an increasing concern that problems connected to agglomerations were developing into a national issue (*ivi*). In contrast with the previous static policy approach of the 1960s and 1970s, the principles from 1996 gave rise to the new concept of the 'urban network' for Switzerland, which promoted the dynamic idea of the networking of cities (OECD 2011: 92); yet, no concrete steps were taken and the urban network does not seem to have come into being. In any case, the strategic objective of this integrated spatial planning policy was to promote interrelation and a network system of towns. In order to achieve this, four lines of action for planning policy were set out:

1. to plan urban areas (i.e. creating regional expanded towns and growth points close to important rail junctions);
2. to strengthen rural areas in their function in terms of economic viability and as living spaces;
3. to preserve natural landscapes and the countryside, i.e. ecological guidelines for economic development;
4. to integrate Switzerland into Europe (i.e. high-speed railway network, transnational cooperation).

As a result, an essential concept became evident: planning did not refer to the achieving of specific objectives any more, but rather to the ideation of larger problem-solving strategies, moving towards strategic planning (Wegelin 1996).

Consequently, the overall concept of spatial planning expanded: integrating the concept of sustainability, improving participatory processes and the application of decision support instruments, with more negotiation-oriented planning and public-private partnerships (PPP). The Report on the Agglomerations was published by the federal administration in 2001, focusing on the need for reforms in densely populated urbanised areas and proposing widespread policy measures in order to target agglomerations. After 2004, Agglomeration Programmes were also trialled, demonstrating the "expanding functions of spatial planning from being a mere physical planning tool, to include more integrated policy measures" (OECD 2002: 90).

Alongside the Agglomeration Programmes the federation and the cantons also introduced Best Practice Models, in order to develop cooperation between communities in agglomeration areas and between the federal levels of the governance system. One example is the Best Practice Model 'Networkcity Glattal' project set up in the Zurich Metropolitan Region (Gabi 2004). The aim was to combine a central government top-down incentive scheme with a bottom-up approach, where communities and cantons are required to organise their agglomeration spaces in order to achieve more effective territorial governance (Ache et al. 2007: 269). Another innovative initiative is the annual Wakker prize (*Premio Wakker* in Italian, *Prix Wakker* in French, *Wakkerpreis* in German) which is awarded to a municipality by the Swiss Heritage Society in recognition of successful urban planning developments.

In recent decades, Switzerland has undergone major transformations. For example, in the 1960s the Swiss population was five million, today it is more than eight million. This rise has been paralleled by the increased construction of housing, roads and public transport, creating new developments in the countryside. Yet, the capacity limits of the transportation networks are under pressure in many areas and there are also repercussions on the country's biodiversity. These developments show that the Confederation is facing a number of serious spatial planning challenges, among them the major issue of the sustainable use of land. In 2012, the Second Home Initiative was adopted, in order to limit the construction of second homes. After many years of lively discussion about the unsatisfactory way existing spatial planning regulations were implemented, the federal authorities aimed to improve legislation in order to limit the availability of building land. In fact, in the referendum held on 3 March 2013 a majority (63%) of the Swiss population voted in favour of a revised Federal Law on Spatial Planning (RPG), which would improve regulated housing development in Switzerland, in order to preserve the Swiss landscape and to reduce urban sprawl (see 4.4.1 and 4.4.2). Moreover, the revised Law gives powers to the Confederation to ensure that the cantons and municipalities comply with federal law. However, there was some concern that the limitation of construction zones could raise land and real estate prices, rents and higher taxes, thus leading to a potential loss of prosperity of the municipalities, the cantons and the wider

economy. Another fear was that the cantons could lose their authority to take decisions as the federal spatial planning model is now increasingly centralised in Bern.

Therefore, some change in Swiss spatial planning has come into being, or at least been endorsed, through popular demand and some through federal decision-making. The general framing seems to be moving in the direction of what today is considered to be effective spatial planning: thus a tripartite affair with the public sector, the private sector stakeholders and academia all being involved. A widely recognised example of this kind of contemporary good practice can be seen in the innovative urban renewal of Hammarby Sjöstad, in Stockholm (SE); for a recent discussion of this see Solly (2016b).

Before focusing more specifically on the country's planning tools at the national, cantonal and local levels, a brief overview of the current situation is provided to emphasise the overall framework and the interconnections. Indeed, as can be seen in table 18, Switzerland is a federal state divided into three main levels of government, each involved in planning (2.3.2, 4.2.1).

Table 18: The organisation of the main planning tools on the three levels (author's own, the plans are in italics)

Level	**Planning tools**
National	Federal Constitution (1999)
	Law of Spatial Planning (1979)
	Sectoral strategies and sectoral plans
Cantonal	Spatial planning and building regulations
	Cantonal structure plan
Local	Communal building regulations
	Land use plan
	Special land use plan

The fundamental responsibilities for spatial planning and land use policies are defined in the Swiss Constitution, since Article 75 of the Federal Constitution and the Federal Law on Spatial Planning are the legal basis of the territorial development of the country as explained above (4.2.2.1). Responsibilities for spatial planning lie with the cantons, while the Federal Government defines guiding principles for land use planning and coordinates the initiatives of the cantons. However, while the Federal Government coordinates the planning at the cantonal and local levels, the cantons have considerable powers and coordinate spatial planning in relation to the federal law principles. In Ache et al. (2007: 269) the relationship between the different administrative layers is described as operating under the so-called 'counter-current principle', where the cantonal structure plans are binding for the Confederation, yet the cantons have to take the federal sector plans into account.

In practice, the national government has two main roles. Firstly, it enacts legislation in other sectoral fields which are relevant for land use planning, like housing, energy, transport and environmental protection. Federal legislation in these areas generally provides a framework that is further specified by the cantonal legislation. Secondly, the Federal Government is directly involved in the preparation of six sectoral plans and two sectoral concepts on issues that have relevance beyond the individual canton (OECD 2017a: 203). These sectoral strategies and plans (discussed below in 4.3.1) are important tools at the national level. Nevertheless, in line with the strong spirit and tradition of local autonomy, each canton has pursued its own legislation according to its particular conditions, formulating its own planning and building laws and cantonal plans (4.3.2). Moreover, Swiss cantons have a highly developed municipal federalism and land use plans are generally delegated to the local level (4.3.3), due to the local knowledge and experience. Figure 8 shows the overall organization.

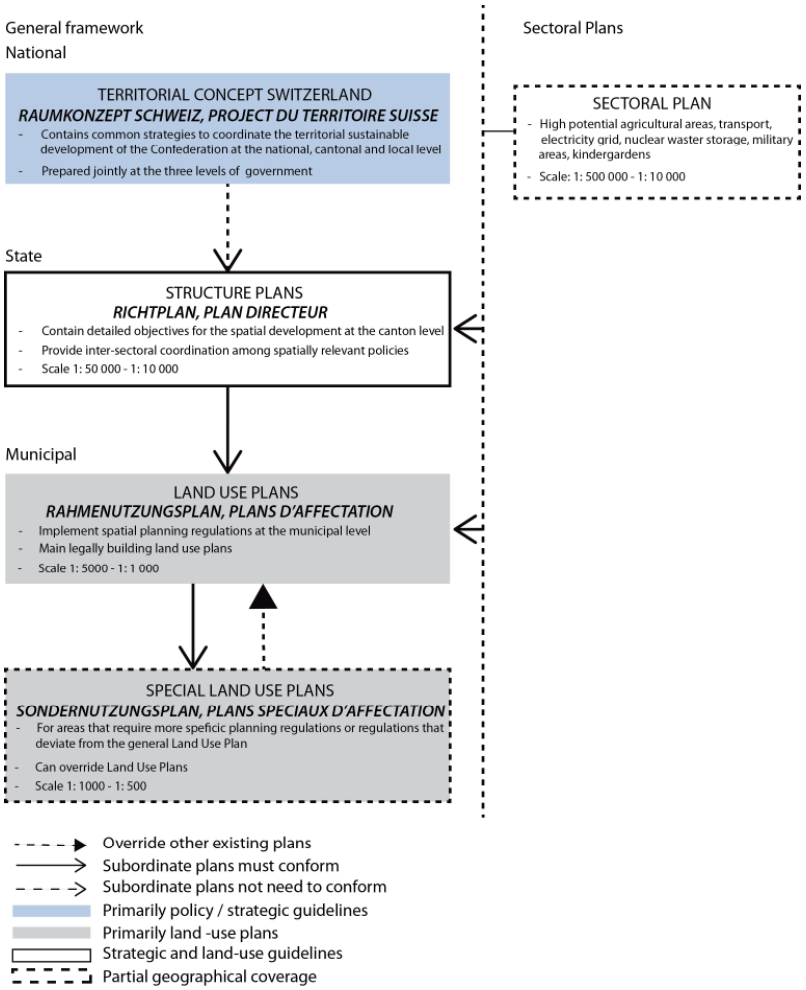


Figure 8: Organisation of spatial and land use in Switzerland (based on OECD 2017a: 204)

4.3.1 National planning tools

Generally, national policy tools in Switzerland are non-binding and aim to outline the national vision. Nevertheless, according to the OECD (2002: 95), "setting these broad goals can lead to national discussion and achieve general consensus on priorities regarding equity and efficiency objectives, urban and rural change, environmental and development issues". Moreover, in under-decentralised systems, such as in Austria, "soft instruments can sometimes work more effectively for policy harmonisation than legally binding tools" (*ivi*).

At the national level, a non-binding country-wide strategic plan, six sectoral plans and two spatial concepts exist (see figure 8 above). The Territorial Concept Switzerland (*Progetto Territoriale Svizzera* in Italian, *Projet du Territoire Suisse* in French and *Raumkonzept Schweiz* in German) is a strategic document which was jointly approved in 2012 by the Confederation, the cantons and the municipalities. It promotes shared initiatives and guidelines that have to be applied at the different levels of government (e.g. transport, energy, landscape).

For the federal government, the sectoral plans (*piani settoriali* in Italian, *plans sectoriels* in French, *Sachpläne* in German) are the most important planning tool to coordinate the territorial impact of certain activities and to harmonise them with cantonal requirements. The sectoral plans concern high-potential agricultural areas, transport, the electricity grid, storage sites for nuclear waste, military projects with territorial impact, and kindergardens. They designate areas for specific land uses within their thematic fields and are binding on subordinate plans. In fact, according to the requirements of Article 2 of the Federal Law on Spatial Planning (concerning the obligation to plan and coordinate), the authorities have to take into account, at all levels of their territorial impact, the conceptions and sectoral plans of the Confederation. Sectoral concepts, which contain less detail than sectoral plans, are prepared for landscape planning and the planning of sports facilities (OECD 2017a: 203).

The transport sectoral plan (*piano settoriale dei trasporti* in Italian, *plan sectoriel des transports* in French and *Sachplan Verkehr* in German) consists of a programmatic part, covering all transport carriers, and a part including the implementation for individual modes of transport, namely roads, rail, public transport and aviation. The sectoral plan contains information on binding objectives, principles and priorities. It sets out the aims of the transport infrastructure policy in the form of objectives, principles and priorities.

The military sectoral plan (*piano settoriale militare* in Italian, *plan sectoriel militaire* in French and *Sachplan Militär* in German) provides the planning and global coordination of military projects with significant impact on the land and the environment. The sectoral plan contains the principles for the coordination of military activities with territorial impact, as well as the cooperation between military and civilian bodies.

The power lines sectoral plan (*piano settoriale elettrodotti* in Italian, *plan sectoriel des lignes de transport d'électricité* in French and *Sachplan Übertragungsleitungen* in German) is concerned with the high-voltage lines of electricity companies (220-kV / 380-kV) and includes the conceptual principles and object sheets for individual power line projects. It serves as a basic part of the approval of the plans of projects that have a significant impact on the territory and the environment.

The objective of the deep geological layers sectoral plan (*piano settoriale dei depositi in strati geologici profondi* in Italian, *plan sectoriel des dépôts en couches géologiques profondes* in French and *Sachplan Geologische Tiefenlager* in German) is to create the prerequisites for the disposal of the radioactive waste produced in Switzerland within the country. It lays down the main criteria for the choice of location, regulates the procedure to be followed and defines the regions and the locations of the deep geological layers (strata).

In the surfaces for crop rotation sectoral plan (*piano settoriale delle superfici per l'avvicendamento delle colture* in Italian, *plan sectoriel des surfaces d'assolement* in French and *Sachplan Fruchtfolgeflächen* in German) the areas for crop rotation are identified, as well as the best agricultural soils of the country and should meet certain climatic and soil requirements. The sectoral plan has the task of ensuring a sufficient supply base of good agricultural land, according to Article 1 paragraph 2 of the Federal Law of 22 June 1979 on Spatial Planning. At the same time, it allows the implementation of more general objectives related to regional development policy, such as quantitative soil protection and the long-term preservation of the best agricultural land.

The most recent sectoral plan, the sectoral plan for kindergardens (*piano settoriale asilo* in Italian, *plan sectoriel asile* in French, *Sachplan Asil* in German), was approved on 20 December 2017 and is binding for the planning authorities.

The legal basis of the sectoral plans is art. 13 of the Federal Law on Spatial Planning. As part of the conceptions and sectoral plans the Confederation shows how it plans to fulfil its tasks in a sectoral or thematic scope and sets out the objectives to be achieved and any conditions or requirements that it intends to comply with. An illustration of the need for a sectoral plan can be seen within the transport sector, where the aim of the sectoral aviation infrastructure plan is to enable the necessary coordination with cantonal spatial planning (Muggli 2004: 2). Although the sectoral plan is not directly binding on private individuals, it does set out how, when permits and licences are issued, the Confederation should operate its decisional power. Article 4 of the 1979 Federal Law on Spatial Planning is the legal basis that ensures 'adequate participation' of the population in the planning process (see 4.2.2.2 above). Currently, a process is underway of revisions of the participation procedures of the sectoral plans.

4.3.2 Cantonal planning tools

One of the key elements for territorial development is linked to using the subnational level of planning effectively, since it also covers socio-economic development objectives. The formulation and strengthening of cantonal structure plans has been successfully promoted in every Swiss canton by the federal authorities; however, the OECD (2002: 95) points out that it would be "useful if further efforts were applied to create institutional links between federal incentive measures and cantonal plans so that local actors could use cantonal plans as a real basis for territorial development that would include regional economic development".

Since the federal level lays down principles and not rules, the cantons implement legislation for the Federal Law on Spatial Planning. However, the aims and instruments of the Federal Law can be binding on the cantons, in order to provide a certain coherence and standardisation to concepts and measuring methods. For example, the Confederation has the right to determine where constructions are allowed. Moreover, cantonal plans can involve regional development strategies with financial implications (OECD 2002: 89).

The cantons implement legislation for the Federal Law on Spatial Planning. The main planning tool at the cantonal level is the 'guiding' or 'structure plan' (*piano direttore cantonale* in Italian, *plan directeur* in French, *Richtplan* in German), which covers the entire area of the canton and defines its future spatial development and is subject to approval by the Federal Council. Initially, the plan illustrates the spatial development and planning strategy of the canton and has to be approved by the Federal Council. The plan also shows how the activities of the Confederation, the cantons and the communes should be integrated into each other. Once approved, the plan becomes binding on the administrative authorities and is usually revised every ten years. According to Muggli (2004: 5), the cantonal structure plan is "not an outline of a 'desirable final state' of the cantonal territory, but a process plan for coordinating and steering the next stages of spatial development already underway". Moreover, the cantonal structure plan aims to harmonise action by the different authorities involved, resolving conflicts if needed. The structure plan decides the implementation time and mode of the public tasks with a spatial impact, such as those concerning sites for waste disposal facilities, nature conservation areas of cantonal importance, public transport networks (see table 19 below). Structure plans are binding on the authorities and are regularly revised.

Table 19: Main cantonal planning responsibilities (based on Swiss Planning and Construction Law, <http://www.building-law.ch/>)

Cantonal level	**Responsibilities**
a) landscape plan	- agricultural areas

	- forest areas - recreation areas - nature conservation areas - cultural heritage areas - areas to be exploited for materials - areas where materials may be deposited
b) residential area plan	
c) transportation plan	- roads of national and cantonal interest - railroads, cable ways, ski-lifts etc. - waterways - air traffic
d) public utility infrastructure plan	- water - electricity and gas - sewage and waste
e) public buildings and plants	

The Cantonal Structure Plans were introduced by the Federal Law on Spatial Planning and, as a result of the 2014 revision of the Law following the 3 March 2013 referendum, their role has been strengthened. The Law also states that future development of settlements should mainly take place within existing building zones. Yet, this new paradigm is a significant challenge for the cantons, since they have been given five years to adapt their Cantonal Structure Plans to the new Federal provisions, which will also be applied to the communal land use plans. The cantons are therefore currently working on the implementation of the provisions of the revised Law, in close cooperation and dialogue with the various municipalities and regions. The Federal Council has already approved some of the revised Cantonal Structure Plans (e.g. Canton Zurich in 2015 and Canton Bern in 2016) to meet the requirements laid down in the new Law.

Due to the strong autonomy of the cantons, there are considerable differences in the regulations as regards building and spatial planning in the various cantons. For example, legislation in the larger cantons is more complex and extensive and than that in the smaller and rural cantons.

Supra-municipal spatial planning tasks are often delegated by large cantons to public-law planning associations (e.g. regional planning associations), also to provide the communes with spatial planning support (ISOCARP 2004: 7). In the canton of Zurich, for instance, these draw up regional structure plans, which develop spatial planning in line with the structure plan for the whole canton. Some cantons and municipalities cooperate together on supra-municipal spatial planning tasks, also across borders. For example, in Geneva, there is a structure plan for the Swiss-French metropolitan area (*Charte de l'agglomération Franco-Valdo-Genevoise*). These spatial planning tasks may include: the implementation of urban planning policies and services on a cross-border scale; the creation of supra-municipal strategic maps; agglomeration schemes and measures; strengthening the functions of metropolitan areas and territorial cohesion; coordinated governance.

In recent years there has been an enhancement of strategic and supra-municipal and cross-border cooperation. For example, as part of the *Projet de territoire Grand Genève* 2016-2030, the French, Geneva and Vaud partners have decided on 8 December 2016 to increase their cooperation.

4.3.3 Local planning tools

Municipal federalism is highly developed in Swiss cantons and most of them delegate land use planning to the local level. The main planning tool is the 'land use plan' (*piani di utilizzazione* in Italian, *plan d'affectation* in French, *Nutzungsplan* in German), which must be in line with the Federal Law on Spatial Planning and the cantonal binding provisions on how land must be used in practice. In fact, since the municipalities have considerable decision-making autonomy, they look at the overall concepts and structure plans as a basis and coordination of their land use plans. Municipal plans are essentially land use plans for zoning, which designate zones for construction, agriculture and environmental conservation (OECD 2002: 88), and are binding on landowners and administrative authorities. However, the rules are more detailed in land use plans than in the cantonal structure plans, because of their "important task of laying down the boundary between building zones and non-building zones" (art. 15, RPG, Muggli 2004: 6). Muggli (*ivi*) further observes that "building zones must respect the planning aims and principles" and not exceed the size as decided at the Confederation level. In fact, the Federal Law on Spatial Planning regulates the municipalities' permit responsibility for buildings which are outside the building zones. So, the permitted use of all land is established in the zoning and is binding on landowners (Newman & Thornley 1996: 63). Moreover, "the federal law authorizes the competent authorities to initiate building land rationalization themselves without the agreement of the landowners" (Muggli 2004: 6). Land use plans must also take into account strict environmental standards (see figure 9). Another task of the municipalities is to issue building permits, which determine whether a project complies with the provision of the laws (figure 10 below).

The structure plan is binding on the authorities and also sets out land use planning requirements, which are binding on landowners and are generally restrictive as regards the highly detailed special land use plans (*piani speciali* in Italian, *plans spéciaux d'affectation* in French, *Gestaltungsplan / Sondernutzungs plan* in German), which often regulate very specific building projects. Special land use plans are prepared for areas that require more specific planning regulations or regulations that derive from the general land use plan (e.g. neighbourhood layouts, architectural details of buildings). They may override land use plans (OECD 2017a: 205). These special land use plans are defined in cantonal legislation, so their details and approval process vary in the different cantons. The land use planning at a local level normally includes the following responsibilities (see table 20):

Table 20: Main local planning responsibilities (based on Swiss Planning and Construction Law, <http://www.building-law.ch/>)

Municipal level	**Responsibilities**
a) building zones	- core zone - neighbourhoods to be preserved - central zones - residential zones - industrial and commercial zones - public buildings
b) areas to remain unused	- recreational areas - nature conservation areas - cultural heritage areas
c) other regulations	- distances to roads, water bodies, forests, etc. - high rise buildings - construction - neighbourhood plans - redevelopment of areas
d) public utility distribution	- power and gas distribution - water distribution - sewage treatment plants - waste removal
e) nature and cultural heritage conservation objects	- unspoilt landscapes - water bodies including banks and flora - viewing points - core zones, streets, plazas, groups of buildings etc. that are important living witnesses to political, economic, social or historical periods - natural monuments, mineral springs (spas) - valuable parks and gardens, trees and hedges - rare plants and animals and the areas necessary for their conservation

Like the Cantonal Structure Plans, Communal Land Use Plans have to adapt to the 2014 revision of the Federal Law on Spatial Planning. In addition, as a consequence of this revision, the standards of environmental law have increasingly to be taken into consideration (figure 9). As regards building laws, because Switzerland is a Federal State made up of 26 cantons, there are 26 different Building Laws.

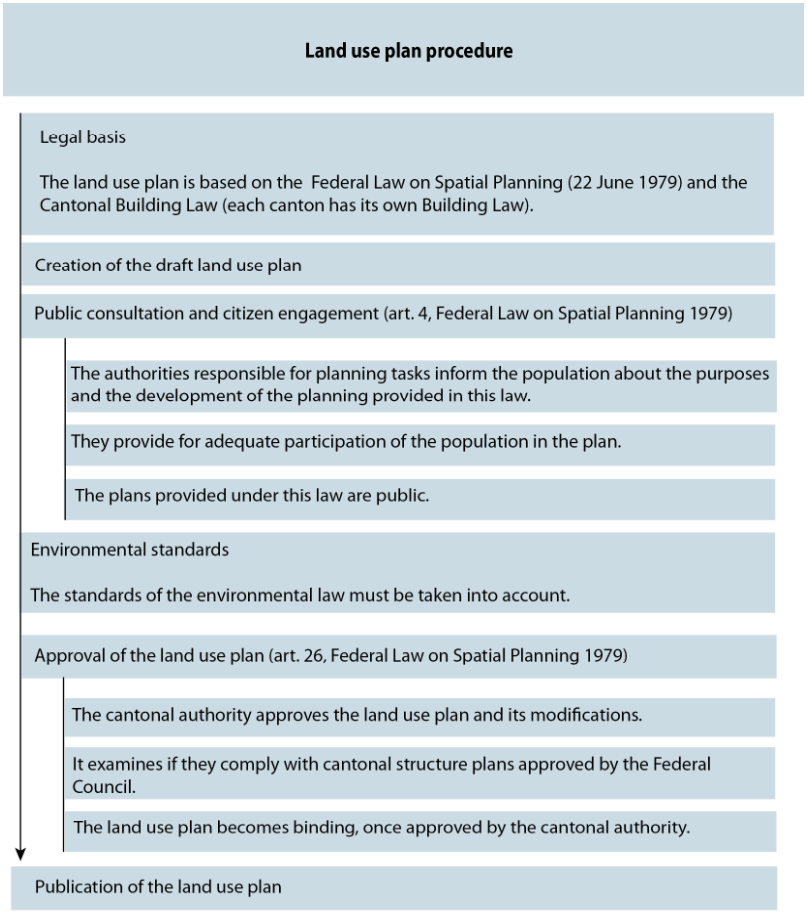


Figure 9: Land use plan procedure (author's own)

Building permits (*permesso di costruzione* in Italian, *permis de costruire* in French, *Baugenehmigung* in German) are generally granted by the local authority where the construction work will take place (see figure 10). The issuing of the building permit by the local authority is coordinated with the cantonal and other authorities involved. The granting of such permits for construction outside the building zones (generally agricultural land) is not allowed by the Federal Law on Spatial Planning; in these cases permits need the approval of at least a cantonal authority. In cases where the granting of permits is assigned by special legislation to the Confederation, for example for national transport infrastructure projects (railways, motorways, pipelines, aviation facilities etc), the cantons do not have responsibility over permits.

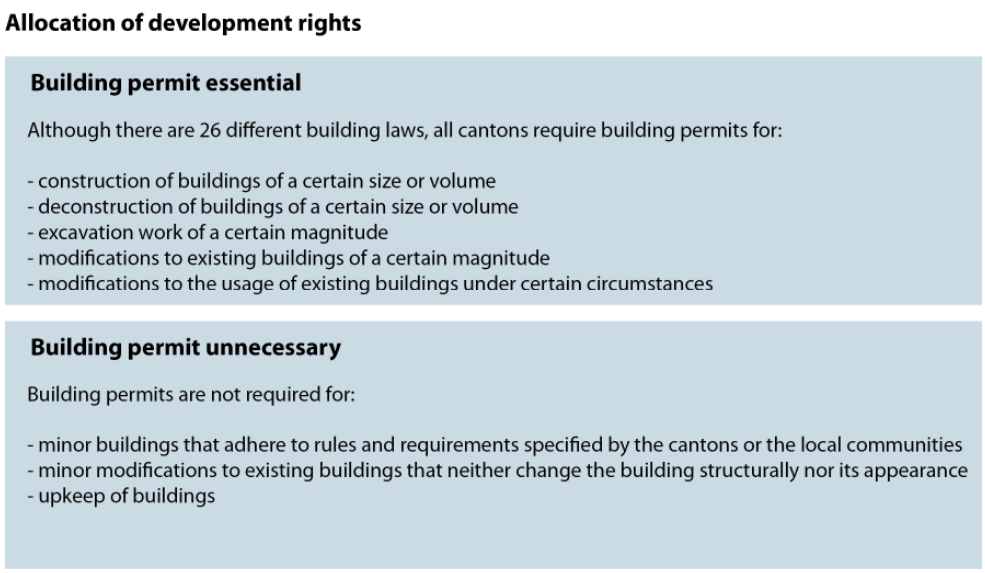


Figure 10: Allocation of development rights (author's own, information available at <http://www.building-law.ch/building-procedure>)

In the table below (21) are set out the rights that influence the operation of spatial planning in Switzerland: in particular, the rights that exist, who holds them and how they are regulated and supervised.

Table 21: Land use rights in Switzerland (author's own)

	Holders of rights			**Allocation, regulation, supervision**
	private	mixed	public	
Land ownership rights		x		*art. 26 of the Constitution (guarantee of ownership)* 1. The right to own property is guaranteed. 2. The compulsory purchase of property and any restriction on ownership that is equivalent to compulsory purchase shall be compensated in full. *art. 641 of the Swiss Civil Code (ownership)* 1. The owner of an object is free to dispose of it as he or she sees fit within the limits of the law. 2. He or she has the right to reclaim it from anyone withholding it from him or her and to protect it against any unwarranted interference. NB: strong protection of property rights

Development rights		x		*art. 75 of the Constitution (spatial planning)* 1. The Confederation shall lay down principles on spatial planning. These principles shall be binding on the Cantons and serve to ensure the appropriate and economic use of the land and its properly ordered settlement. 2. It shall ensure that such damage or nuisance is avoided. The costs of avoiding or eliminating such damage or nuisance are borne by those responsible for causing it. 3. The Cantons are responsible for the implementation of the relevant federal regulations, except where the law reserves this duty for the Confederation. *art. 641 of the Swiss Civil Code (ownership)* 1. The owner of an object is free to dispose of it as he or she sees fit within the limits of the law. 2. He or she has the right to reclaim it from anyone withholding it from him or her and to protect it against any unwarranted interference.
Expropriation or pre-emption rights (or similar)			x	*art. 26 of the Constitution (guarantee of ownership)* 1. The right to own property is guaranteed. 2. The compulsory purchase of property and any restriction on ownership that is equivalent to compulsory purchase shall be compensated in full. *art. 641 of the Swiss Civil Code (ownership)* 1. The owner of an object is free to dispose of it as he or she sees fit within the limits of the law. 2. He or she has the right to reclaim it from anyone withholding it from him or her and to protect it against any unwarranted interference. *art. 5 of the Federal Law on Spatial Planning (compensation and reimbursement)* 1. Cantonal law provides for appropriate compensation of benefits or damages resulting from planning schedules under this Act. 2. Restrictions of ownership equivalent to expropriation, resulting from planning schedules under this Act, shall be fully compensated. 3. The cantons may require the payment of compensation for property ownership restrictions to be inserted in the land register. NB: Expropriation is rarely applicable, due to the strong protection of property rights, which in some areas is leading to rising property prices, land hoarding and speculation. Expropriation is less complicated in the case of the construction of transport infrastructure and for military purposes, but very difficult for other purposes (e.g. public buildings, the protection of natural reserves).

4.4 Discourse on spatial governance and planning

Having provided a description of the Swiss structure and of its operative tools, this section focuses on the main discussion topics within the planning field, highlighting how discourses can shape future spatial planning conditions. After a first overview of how political trends have been influencing the Swiss planning system, the question “which are the most important topics of discussion at the national, regional and local level?” is faced (see table 22). In addition, the section aims to show how the planning process is moving towards more flexibility and a strategic management of the territory.

4.4.1 Policy trends in the Swiss planning system

Switzerland is a Confederation with strong democratic traditions: administrations, parliaments, courts and governments are organized and managed at the various political levels and there are frequent referendums at the national, cantonal and communal levels. The competences of the federal authorities are restricted to a minimum and the country tries to integrate its citizens' preferences and insights into policy-making through the use of direct democracy and transparent decision-making. However, because of the country's fragmentation issues, the Confederation has an important role in coordinating and monitoring the planning at the cantonal and local level, and in assessing the population's various preferences, values and culture in policy-making through the use of direct democracy. Indeed, in Switzerland, adaptive territorial governance and place-based decision-making seem to benefit from the use of referendums and direct democracy. An important current example of this process in action is provided in the next paragraphs.

This section of the chapter draws on newspaper interviews with politicians and other stakeholders carried out in the run-up to the proposed change of the Federal Law on Spatial Planning in the 3 March 2013 referendum. Thus, in an interview in January 2013, Beat Jans, from the centre-left Social Democratic Party, in favour of a revised change of the Federal Law on Spatial Planning in the 3 March 2013 referendum, commented "We're destroying the Swiss landscape. We construct too much, in the wrong areas and the wrong things. We need to change something urgently" (Raaflaub 2013). In a parallel interview, Pierre-Alain Rumley, director of the Federal Spatial Development Office (2000-2008) and professor of urban planning at Neuchâtel University, declared that in order to improve urban planning in the long-term: "We have to construct more compact buildings. We know that most jobs are in city centres, so we have to increase the density in the centres to reduce the amount of transport and distances people cover. We are currently overwhelmed by mobility problems: blocked in traffic jams, standing up on public transport – it's even dangerous when you take your bike out." (Eichenberger 2013). A wide range of stakeholders, such as the Swiss citizens, the public sectors and many environmental associations, were urging the government to adopt a more sustainable administration of the country in order to tackle these global-local challenges. Great importance was placed on environmental and landscape protection and some actors even argued that agriculture is dependent on the concept of unspoilt environment. So, for example, the Pro Natura environmental group complained about the unsatisfactory implementation of the existing spatial planning regulations and demanded that building land should not be expanded over the next decades.

Table 22: The main planning discourse topics at the three levels (author's own)

Level	Planning discourse

National	- better regulation of settlement developments - need for a more efficient land use management
Cantonal	- changing nature of the rural communities
Local	- scarcity of land - increase of urban sprawl - rise of real estate prices

In the cameo described below, which shows the Swiss democratic process in action, it can be seen how the land use issues led to the 3 March 2013 referendum on modifying the Federal Law on Spatial Planning.

In 2005, the US biotechnology corporation Amgen decided to build an industrial plant on an important greenfield site in the Fribourg canton. The plant was not built, but the controversy triggered a popular land use initiative which condemned inadequacy in the national legislation (Raaflaub 2013). In 2008, the Pro Natura group presented 109,422 signatures requesting that the total area under construction in Switzerland should not increase for twenty years. The government rejected the initiative, deeming the proposal too extreme and inflexible, but it made an indirect counterproposal through a partial revision of the Federal Law on Spatial Planning. This revision stated that the cantons would have five years to apply the revised law, in order to reduce development zones and to reimburse landowners whose land might be transformed into an agricultural area. Moreover, the proprietors whose land would be rezoned to their advantage would have to pay a levy of at least 20 per cent on the increase in value, should their plot be sold or developed. In addition, the state would be able to oblige owners to develop their parcel of land within a certain time limit, under threat of sanctions. As the parliament accepted this counterproposal in summer 2012, the 2008 initiative was withdrawn.

However, the counterproposal was contested by business, home and real estate associations, which were not happy with the proposed legislation amendment. Supported by the Swiss trade association representing the interests of small and medium-sized enterprises (USAM – *Union Suisse des Arts et Métiers* in French, *Gewerbeverband* in German, *Unione Svizzera delle arti e mestieri* in Italian) and the right-wing Swiss People's Party (Eichenberger 2013, see also table 23 below), they gathered 69,277 valid signatures (nearly half coming from the Valais canton) and forced a referendum. Raaflaub (2013) observes that while environmentalists declared that urban sprawl was damaging the countryside, business-oriented opponents were concerned by the challenge of rezoning and by possible additional levies. Therefore, on 3 March 2013, the Swiss population was called to vote on whether to limit building land, tightening the federal law on land use. These changes to the law would require cantons and communes to reduce building land, which was considered to have been previously measured too generously, and also to compensate the owners of such land.

Table 23: The alignment of Swiss political parties in the 2013 referendum (based on Eichenberger 2013)

Parties and organisations in favour of the legislative amendment	Parties and organisation against the revised spatial planning law
Social Democrats, Green Party, Green-Liberal Party, Pro Natura, Swiss Association for Spatial Planning, Swiss Cities Association	Swiss People's Party, Swiss Trade Association, Swiss Home Owners' Association, Swiss Real Estate Association, Swiss Automobile Trade Association

On 3 March 2013 a majority (63%) of the Swiss population voted in favour of a revised Federal Law on Spatial Planning, which would improve regulated housing development in Switzerland, in order to preserve the Swiss landscape and reduce urban sprawl. Then, after some debate, the parliament approved the government's proposal.

As a consequence of this amendment to the Federal Law, contractors now have to build more densely. Yet, compact development has its limitations. In fact, over the next twenty years the number of Swiss residents is expected to increase from 8 million to 9.5 million and "taller buildings and the renovation of old structures will not be enough to house an additional 1.5 million people", said Jean-François Rime of the rightwing People's Party and president of USAM, the Swiss trade association, interviewed by Raaflaub (2013). Moreover, as stated by the Federal Office for Spatial Development in 2008, building land reserves are often in the wrong areas. Rime also declared that in his opinion coercive land-law measures could lead to a further shortage of building areas. Yet, the situation is not the same in all the country and there are big differences between the alpine regions. In fact, Rumley explains that:

> *Urban planning tends to be slightly better in Swiss-German regions than in the French-speaking parts of the country. I don't really know why, maybe because the German-speaking cantons were quicker to discover the environmental and transport problems. That's why Zurich, Bern and Basel are now much better placed than Geneva or Lausanne. At the same time, professional training in urban planning is much older and firmly rooted in Swiss-German cantons.* (Eichenberger 2013)

4.4.2 The national level

This section takes a deeper look at some of the most influential sector policy fields in the current debates in spatial planning, and to what extent these policy fields are able to influence the Swiss planning debate.

As discussed in 4.4.1, in the 2013 referendum the Swiss population was asked to vote on the tightening of land use regulations, since urban sprawl is considered to be a major issue. As a consequence, there has been an increase of interest in

environmental policy. In fact, the 2014 revision of the Federal Law on Spatial Planning emphasised the importance of sustainable development policies and protection of the environment. This can also be seen in the 2016 adoption of the Emerald Network (5.3.1.2) and the creation of federal indicators that monitor the sustainable development of the country, such as MONET (3.4.2.1). Moreover, there has also been an increase of interest in the housing policy field. In fact, with the 20 March 2015 Federal Law on Second Homes, which came into force on 1 January 2016, second homes cannot be built in municipalities where more than 20% of the dwellings are second homes. Indeed, the availability of land is scarce in the country, as already pointed out (4.2), since only a third of Switzerland's surface area is available for settlement (Scholl 2008: 13), and it is one of the most densely populated OECD countries.

Another important topic in the current spatial planning debate is transport policy. In fact, in the face of the new challenge of massively increasing traffic volumes, also cross-border, Swiss transport policy is based on the principle of sustainability and efficient, sometimes large-scale mobility solutions, such as the new Gotthard Tunnel (which opened in 2016). Thus, the national policy takes into major consideration the key European transport corridors (e.g. TEN-T, Trans-European Networks −Transport). Indeed, the transport sectoral plan (4.3.1) has considerable responsibilities for transport planning, policy-making and implementation, coordinating the territorial impact of the projects and harmonising them with the cantonal requirements.

As regards discussion on cohesion and regional policy, it has been gaining importance in the planning debate. In fact, since 2008, the Confederation has been promoting cooperation between the cantons within the framework of the New Regional Policy (NRP, 2.3.4). With the NRP both the Federal Government and the cantons support mountain and border regions, as well as rural areas, in coping with changes in economic structures. Industrial policy is another important field, since the Swiss industrial policy framework is based on the principle of decentralised federalism, and retail policy is receiving more attention. In fact, digital technology has been increasing in the Swiss retail sector in the last few years, impacting on traditional retailing, but it is too early to evaluate the territorial impact. As is happening in the neighbouring European countries, ICT and digitalisation policy is increasing its influence in the current debates in spatial planning. Indeed, like the rest of the world Switzerland is increasingly digitalised, promoting smart city experimentations and piloting e-democracy (5.3.1.5).

Agricultural policy is also important in Switzerland's spatial planning discourse, with a special focus on the urban-rural debate. Because of its traditional strong respect for local identities and procedures, Swiss rural development policy and agricultural policy is highly localised (at the cantonal and communal level) and regulated. However, at the national level a new agriculture policy framework is currently being implemented for the period 2014-2017. Moreover, the national

surfaces for crop rotation sectoral plan (4.3.1) maps and monitors the use of the country's best agricultural soils, making sure that they meet certain climatic and crop requirements. It takes into consideration the long term impact of agricultural policies in order to safeguard the best agricultural land.

As regards energy policy, in the 21 May 2017 referendum, the Swiss voted in favour of supporting renewable energy policies and banning new nuclear plans. This means that Switzerland should be able to position itself in the area of renewable energy throughout Europe, opening up new business opportunities. Switzerland has also been negotiating with the EU on a bilateral agreement in the electricity sector since 2007. At the national level, the power lines sectoral plan (4.3.1) is responsible for the approval of project plans that have a significant impact on the territory and the environment.

Cultural heritage and tourism policy is a relevant topic since Switzerland's cultural and natural heritage (e.g. landscape protection) and tourism are an important part of the country's spatial identity and policy-making. The environment is further protected at the national level by the military sectoral plan (4.3.1), which sets out the principles and guidelines for the coordination of military activities and projects with a significant territorial impact, as well as the cooperation between military and civilian bodies.

Switzerland also has very high levels of water and waste management and monitoring, e.g. a land filling ban was introduced on 1 January 2000. As regards radioactive waste, the deep geological layers sectoral plan (4.3.1) is responsible at a national level for the locations and procedures to be followed for the disposal of such waste in the country.

Health and higher education policy are also important in the planning policy discourse. The main Swiss universities are cantonal and the polytechnics are federal. However, on 1 January 2017, the Swiss Higher Education Act came into force, consolidating the federal funding of the cantonal universities. Alongside the diversity in education, there are also significant regional variations. Van Den Berg (2008: 52) notes that "certain regions are more important than others for the course of progress, prosperity and quality of life in Switzerland, for instance, Zurich, Basel, Geneva and Ticino", and explains that "clusters of (international) businesses that operate worldwide and cooperate and compete, concentrations of creative (cultural) activities that attract innovators and creative people (ETH), are such places".

4.4.3 The cantonal level

As explained in section 4.2, territorial disparities have an important role in Swiss politics and the cantons have considerable influence on the taking of decisions at the federal level. Indeed, each canton has a great amount of legislative freedom as well as the power to veto political reforms.

As a consequence of the 2013 referendum (4.3, 4.4.1), of the 2014 revised Federal Law on Spatial Planning and of the increase of attention in environmental policy at the national level, the cantonal administrations are currently applying stricter regulations in order to reduce building areas in the cantons, which before had been measured overgenerously. Moreover, the cantons have five years to adapt their Cantonal Structure Plans to the new Federal provisions (4.3.2) and are obliged to reduce their building plots and to compensate their owners. However, there are fears that the cantons could lose competencies to the government. In the discussion leading up to the 3 March 2013 referendum (4.4.1), Rumley points out that:

> *The cantons remain in charge of urban planning, as before, but the new rules are more precise and discussions will now focus on the size of the building zones. The federal authorities won't impose anything, but the cantons must now declare what they intend to do. The federal authorities are aware of all the figures and plan to ensure that the cantons reduce the size of their development zones. If they don't, they will not be allowed to create any new ones.* (Eichenberger 2013)

Yet, one of the risks is that the cantons could demand that certain building projects could be completed more quickly, since the building area would otherwise be rezoned (revertive zoning). Like at the national level, there has been an increase of interest in the housing policy field also at the cantonal level. Indeed, cantons must encourage a better occupancy rate of secondary dwellings, as stated in Article 3 of the 2015 Federal Law on Second Homes. Moreover, where appropriate, the cantons may issue prescriptions which restrict the construction of housing more strictly than the Law requires.

Rumley (Eichenberger 2013), suggests that there are also differences between the alpine cantons and communes: "If you look at two tourist regions, canton Graubünden has been successful with planning, while in Valais it's much more complicated. Valais has lots of areas where you can build as the communes have enjoyed considerable autonomy for a long time. It's the only canton where 70 per cent of the population are home owners (the Swiss average is 40 per cent)." Raaflaub (2013) describes Valais as a 'combative canton'. In fact, of the total 69,277 valid signatures for the referendum against the proposed spatial planning law, almost 32,000 came from the Valais canton. According to the Federal Office for Spatial Development, Valais has the largest area of building plots per capita as well as the largest share of developable surfaces (building reserves). Moreover, the canton strongly relies on tourism and its opposition initiative increased also due to the approved limitation of the spread of second homes on 11 March 2012. The canton even considered initiating a cantonal referendum, which, with the support of at least eight cantons, would have forced a popular vote on the proposed federal law, but no other canton was prepared to join canton Valais.

Overall, the discussion on cohesion and regional policy is strongly influencing the planning at the cantonal level. In fact, as explained above in 4.4.2, since 2008 the cantons are increasingly cooperating with one another, supporting cross-border regions and mountain and rural areas. As regards transport policy, cantons have responsibility for the roads of cantonal interest. As regards ICT and direct democracy, several cantons are piloting and analysing the effect of the different forms of e-democracy and e-voting in during the political processes (5.3.1.5).

4.4.4 The local level

Like the cantons, the communes are adapting their land use plans to the 2014 revision of the Federal Law on Spatial Planning (4.3.2, 4.3.3), taking into more account standards of environmental law and policy. For example, the country shows high levels of water and waste management and monitoring at a local level.

Urban sprawl and land consumption is one of the major issues at a local level and municipalities are increasingly cooperating in order to densify existing built up areas. Yet, in the discussion leading up to the 3 March 2013 referendum (4.4.1), Rime declares that "communes and cantons know the local conditions and may also decide themselves what they want and what they don't want" (Raaflaub 2013), which is strongly linked to the Confederation's use of direct democracy. One of the risks that Eichenberger (2013) points out, is that once the revised law is accepted, it will take some time for the communes and the cantons to amend their building zones. However, Rumley explains that:

> *The revision of the law will take some time in the communes. But at the same time enough land needs to be put aside for the population's needs, especially in cities. The cantons are responsible for ensuring there is sufficient land available, but the law doesn't stipulate how they can guarantee that well-located land comes onto the market. You must remember that the aim is to reduce the size of development zones while making resources available to build on well-placed land, so landowners need to be encouraged to do so.* (Eichenberger 2013)

4.5 Swiss planning in practice

The next section explores the current state of planning in the Bern canton and focuses on the function of planning in the Bern municipality. The aim is to consider an example of current Swiss planning in practice, focusing on the way it is managed and on its main challenges and objectives.

4.5.1 Planning in the Bern canton

The canton of Bern is geographically located in the heart of the country and hosts the city of Bern, the capital of the canton and of Switzerland. It also hosts the government of Switzerland and the federal parliament. It is the second largest canton (5,959 km²), after Grisons, and the second most populous of the Swiss cantons (950,000), after Zurich. The canton of Bern shares its borders with eleven other cantons and can be considered a language frontier between the German and the French cantons. Also for this reason the canton has been chosen as the political centre of the country.

As observed before, each canton has its own Constitution. The current Constitution of the canton of Bern was adopted on 6 June 1993, repealing the law of the previous Constitution of 4 June 1893 and its later amendments (see Article 131). In particular, section 3.2 of the Constitution (status as of 11 March 2015, available at <https://www.admin.ch/opc/it/classified-compilation/19930146/index.html>, accessed on 5 January 2018) focuses on spatial planning and building permits. Article 33 states that:

> *1. The canton and the communes shall ensure the economical use of the land and its properly ordered settlement, and the preservation of recreation areas.*
> *2. Spatial planning and building regulations must have the desired development of the canton as their aim. They shall take account of the diverse requirements of the population and the economy as well as the protection the environment.*
> *3. The canton shall ensure that sufficient arable land is preserved for agricultural purposes.*

In the canton of Bern, citizens have active democratic opportunities (e.g. they can vote in referendums). In fact, the canton encourages the local authorities and the administration to openly inform its citizens about policies, in order to improve their confidence in the government. Bern is also the first Swiss canton which has introduced the *principe de publicité* in its Constitution (see article 17, paragraph 3), declaring that “everyone has a right to inspect official files in the absence of any prevailing public or private interests”.

The cantonal administration consists of a central and of a decentralised government administration. The central government consists of the State Chancellery (*Chancellerie d’État* in French, *Staatskanzlei* in German) and of seven departments at the head of which are the seven members of the Executive Council (*Conseil-exécutif* in French, *Regierungsrat* in German), introduced in 1906. It is the government of the canton of Bern and holds executive powers. Its members (see table 24) are elected by direct popular election every four years. Every Councillor is the head of a cantonal administration department. One seat on

the Executive Council is reserved under the cantonal Constitution for a French-speaking citizen from the Bernese Jura.

Table 24: Bern cantonal administration 2018 (author's own)

Department	**State Councillor**
Cantonal Chancellor	Christoph Auer
Director of Construction, Transport and Energy	Barbara Egger-Jenzer
Director of Justice and Communal and Ecclesiastic Affairs	Christoph Neuhaus
Director of Education	Bernhard Pulver
Police and Military Director	Hans-Jürg Käser
Director of Finance	Beatrice Simon
Director of Economic Affairs	Christoph Ammann
Director of Health and Welfare	Pierre Alain Schnegg

The decentralised government comprises the communal administrations and various offices (*Préfectures, Office du registre du commerce, Bureaux du registre foncier, Offices des poursuites et des faillites, Autorité de protection de l'enfant et de l'adulte*). Moreover, since the Audit Office (*Contrôle des Finances*) is a supreme specialised body that monitors finances in the canton of Bern, it is an independent unit within the cantonal administration.

The Grand Council of Bern (*Grand conseil* in French, *Grosser Rat* in German) is the parliament of the canton of Bern and holds the legislative authority. It consists of 160 deputies elected by proportional representation every four years. There are twelve seats guaranteed for the Bernese Jura, the French-speaking part of the canton, while the French-speaking minority in the bilingual district of Biel/Bienne has three seats guaranteed. The Grand Council formulates constitutional drafts, laws and decrees. It also exercises supervision over the government and the cantonal administration and controls every topic submitted to a popular referendum.

There is a two-tiered court system in the canton, which consists of district courts and a cantonal Supreme Court (*Cour suprême* in French, *Obergericht* in German). There is also an administrative court (*Tribunal administratif* in French, *Verwaltungsgericht* in German,) and other specialised courts and judicial boards.

The canton is divided into five regions and ten administrative districts. Prefects (*préfets* in French, *Regierungsstatthalter* in German) are at head of these administrative districts and form the link between the canton and the municipalities. They are elected by the electorate of the district and are responsible for the district's administration. Today, there are 352 communes in the Bern canton, the largest of these is the municipality of Bern.

4.5.2 Bern's current and future development projects

Various projects to change the city structure are underway in the commune of Bern. Below are brief descriptions of two recent large-scales projects which show at a practical level how planning is currently carried out in a Swiss municipality, as well as the underlying land policy model.

As will be seen in 4.6.3, a transformation in land use practices is currently taking place in Switzerland, with a transition towards large-scale urban development projects using more flexible regulatory instruments and public-private partnerships. An example of this kind of strategic development is the urban area of Bern Brünnen, one of the most important development areas in the federal state (figure 11).

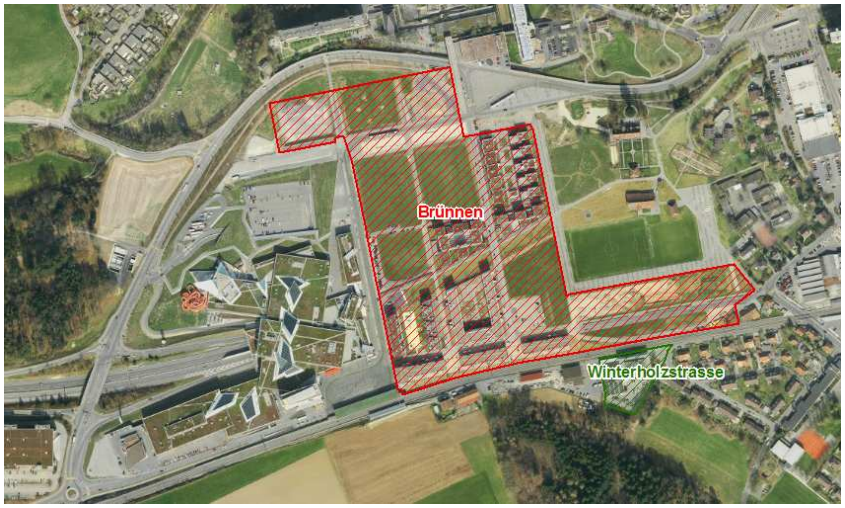


Figure 11: Brünnen <http://map.bern.ch/stadtplan/?grundplan=Orthofoto_2012&koor=2595278,1199389&zoom=3&hl=0&layer=Wohnbauprojekt&subtheme=CatFreizeit&meas=undefined>

Brünnen's new city centre was inaugurated in 2008 and apartments for about 2600 people are still under construction, together with related facilities, green and recreational areas. Moreover, the district is easily accessible by public transport and the residential area is divided into 21 main buildings. In 2008, the Brünnen Verwaltungs AG was founded, serving as a coordination centre for the 21 residential buildings and fulfilling the main contractual and statutory tasks. In addition, the Brünnen Verwaltungs AG is responsible for the management, construction, maintenance and administration of the various buildings, facilities and surrounding areas. It also manages the common spaces and the green and park system. However, the realisation of the residential buildings is carried out by the individual landowners. In fact, one of the aims of the architectural competition required by the building regulations is to ensure a high level of design quality <http://www.bruennen.ch/bruennen_verwaltungs_ag.html>.

The Westside shopping and leisure centre (figure 12), designed by Daniel Libeskind and completed in October 2008, is a multi-use facility with shops, restaurants, fitness and conference spaces, which serves to attract people also from neighbouring areas.

Figure 12: Westside (photo taken by author on 16/02/2016 during an excursion on Urban Development and Land Policy)

Another interesting current project is the Wankdorf City development, one of the last available construction areas outside Bern. The Swiss Railway (SBB), one of the most important actors in Switzerland's property sector, has chosen Wankdorf City as the location of its new main headquarters hub. The project consists of planning a new commercial zone that includes a highway junction, train station, shopping centre and leisure facilities. The project is located in a low-density area and involves partnerships between public and private actors. It was originally expected that the share of housing would be only 20%, but the fear that Wankdorf City might become a kind of ghost town (without permanent residents) especially during the weekend, led to the proportion being raised to 50%. In fact, Markus Hongler, responsible for the building site and head of the Mobiliar real estate company, explains that "The Mobiliar project is future-proof, you can live in Wankdorf City, work and spend your free time there" (Ehinger 2014). Moreover, under the leadership of the city, development planning will be launched in the next phase. According to the project's planning provisions, building permits began to be available towards the end of 2016, and the buildings are likely to be handed over to the future tenants at the end of 2018.

At this local level, it is important to highlight the existence of another major actor in Swiss property ownership: the *Burgergemeinde* (citizen's community in English), a statutory public law corporation, which administers the common property for the members of the community. In Switzerland there are many *Burgergemeinde* and similar corporations, which are known by different

names in the various cantons (e.g. *Patriziato* in the Ticino, *Bourgeoisie* in Valais). They are ancient civic corporations, some of them large and powerful landowners, which have successfully managed their assets over the centuries and which may show differences in terms of organisation, powers and responsibilities. The *Burgergemeinde Bern* is the community of citizens of the City of Bern. It is one of the largest landowners in the Swiss capital, also in the Wankdorf district, and has a strategy of not selling land, but rather of providing building leases (Gerber et al. 2011). One of the tasks of this public law body is to provide social assistance, as well as to guarantee cultural and social activities. However, since the *Burgergemeinde Bern* does not have the possibility to levy taxes, it must finance its expenditures with the proceeds from its assets and its entrepreneurial activity.

4.6 Positioning the Swiss system of spatial governance and planning

As seen earlier in the chapter (4.1), a variety of classifications exist for collocating the various planning traditions and systems in Europe, such as planning families and ideal types, and the delivery of land use development rights. Yet the analysis of the spatial planning system of Switzerland has been somewhat overlooked by comparative studies of spatial planning systems in Europe (1.1). In this section, Switzerland's positioning is discussed and reappraised.

4.6.1 Appraising Switzerland's legal family and ideal type

As regards the classification (or families) of the legal and administrative systems (4.1.2), it seems that the Swiss spatial planning system should be classified within the Civil Law Family (Roman Law, Napoleonic Code, see table 2 in 4.1.2) and within the Germanic Family's legal traditions (table 3 in 4.1.2), where the federal governmental level and the cantonal level each have strong autonomy and legislative power. Newman & Thornley's (1996: 62-63) collocation of the Swiss planning system within the Germanic family, a choice that is reiterated by Ache et al. (2007: 268) and Marcks et al. (2016: 10), can thus tentatively be confimed. Moreover, as explained in 4.1.2, there are strong similarities between the Germanic Family's legal traditions and those of the Napoleonic Family, since there are relatively few distinctions between Romanic and Germanic legislation. In fact, the Swiss Civil Code (*Codice Civile* in Italian, *Code Civil* in French *Zivilgesetzbuch* in German, and *Cudesch Civil* in Romansch), adopted in 1907 in order to regulate relationships between individuals, is strongly influenced by both the German and Roman law traditions; a point emphasised with particular regard to property driven land use policies in Switzerland by Knoepfel (2016). In the table below (25), Switzerland has been added by the author; the country was not considered in the surveys by the European Compendium of Spatial Planning

(CEC 1997) and Nadin & Stead (2008a), but, as noted before, was discussed by Newman & Thornley (1996), Farinós Dasí (2007) and Marcks et al. (2016).

Table 25: Planning system typologies 2 (Nadin & Stead 2008a: 39, based on Newman & Thornley 1996), CH added by author

Nordic	British	Germanic	Napoleonic
DK, FI, SE	IE, UK	AT, DE, CH	BE, FR, IT, LU, NL, PT, ES, NL

Moreover, as regards the classification of ideal types (4.1.3), the Swiss planning system can be positioned within the comprehensive integrated system (see tables 6 and 7), as proposed by Farinós Dasí (2007: 118). Such an approach focuses particularly on the efficiency of spatial coordination, since spatial planning is "conducted through a systematic and formal hierarchy of plans from national to local level, which coordinate public sector activities across different sectors", and therefore this tradition requires the planning process to have "responsive and sophisticated planning institutions" and "considerable political commitment" (CEC 1997: 37). In the table below (26), Switzerland has been added by the author; the country was not considered in the surveys by the European Compendium of Spatial Planning (CEC 1997) and Nadin & Stead (2008a), but was discussed in ESPON 2.3.2 (Farinós Dasí 2007).

Table 26: The expansion of ideal types 2 (Nadin & Stead 2008a: 39, based on Farinós Dasí 2007), CH added by author

Regional economic	Comprehensive integrated	Land use management	Urbanism
FR, DE, PT (+IE, SE, UK) HU, LV, LT, SK	AT, DK, FI, NL, SE, DE (+BE, FR, IE, LU, UK) BG, EE, HU, LV, LT PL, RO, SL , SV, CH	BE, IE, LU, UK (+PT, ES) CY, CZ, MT	GR, IT, ES, CY, MT

However, a recent table classifying the spatial planning typologies in OECD countries collocates Switzerland (like most other European countries) in relation to both the comprehensive integrated and the land use management categories (Silva & Acheampong 2015: 14). This dilemma of exactly where to collocate countries is largely due to the fact that spatial planning systems are not static and can move between classifications. In any case, Reimer et al. (2014: 8) argue against "the logic of categorization and the inescapably associated blindness towards context that are traditionally strongly rooted in planning research". Moreover, differences might also be identified at the different levels of government. Indeed, while ESPON 2.3.2 (Farinós Dasí et al. 2007: 54) classifies Switzerland overall as comprehensive integrated, it distinguishes between the

national, regional and local levels: the national level is comprehensive integrated and regional economic; the regional level is comprehensive integrated; and the local level is both comprehensive integrated and land use management. Although land use management and the urbanism tradition are often present at the local level this should not be considered conflictual, since it occurs in nearly every country (*ivi*). Moreover, as seen in 4.1.3 (table 5), Switzerland has a mature spatial planning system: the distance between goals and outcomes is narrow, showing that the effectiveness of the system is considered to be high.

In any case, the Swiss Confederation has strong cantonal authorities (4.2.3), which share responsibility with the central government, and local municipalities (4.2.4), which also play an important role. Thus, the Swiss spatial planning system appears to be characterised by a decentralised division of powers. However, the reality might sometimes be more complex and difficult to classify as neatly separate, since the "responsibility for spatial planning decisions may apparently be devolved to regional or local governments whilst control over resources or powers of supervision and intervention remains at the centre" (CEC 1997: 43).

4.6.2 Switzerland as a neo-performative model

Taking into consideration the classification of planning systems through their way of delivering transformation rights (4.1.4, figure 5), it seems that spatial planning in Switzerland can broadly be classified within the neo-performative model (see figure 13 below). In a neo-performative model, a spatial development process at the local level can be initiated by a developer and by the municipality, since both can work on project plans. The plan is normally based on a programme indicating the objectives of a plan and, if a private developer is involved, this programme is generally worked out after negotiations between the developer and the municipality. In the figure below, Switzerland has been added to the three models of spatial governance systems proposed by Knieling at al. (2016) and Janin Rivolin (2017).

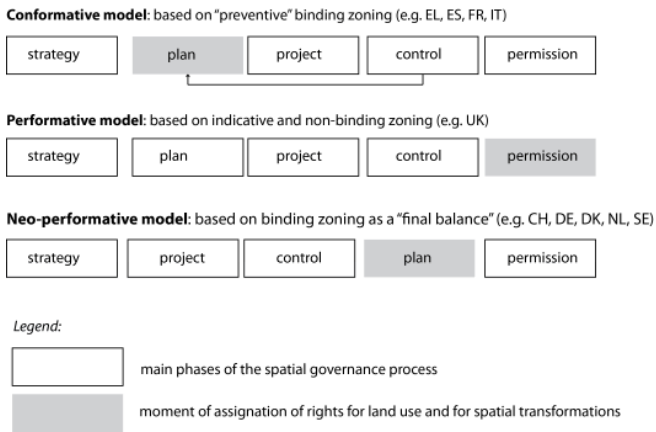


Figure 13: Three models of spatial governance systems 2 (Janin Rivolin 2017: 14, an adaptation of Knieling et al. 2016), CH added by author

The Swiss planning system is plan-led and provides a high level of legal certainty as regards building possibilities. In particular, local zoning plans, which are supposed to be coherent with cantonal structure plans, are binding on landowners and are generally revised every fifteen years. According to Gerber (2016: 197), some municipalities develop their own strategic plans, such as master plans, in order to provide a greater degree of flexibility. He adds (*ivi*) that these strategic plans "can be a preliminary step towards a legally recognized plan (such as a municipal structure plan): they can become contractually binding as such if the different partners who took part in the elaboration of the plan sign it, or they can be used as guidelines in issues that are not covered by other plans". On the contrary, the importance held by stricter instruments does not generally decrease.

Moreover, Swiss comprehensive and local zoning plans are prepared by public authorities. However, in Switzerland urban regeneration projects are generally financed by private actors like institutional investors (insurance companies or pension funds), real estate companies, construction companies, property groups listed on the stock exchange, cooperatives and so on, rather than by the local authorities which do not invest directly in residential projects (Rérat 2012: 120). Yet, in practice when an urban regeneration development is on privately owned land, Swiss municipalities usually wait until after the conclusion of negotiations with the landowners or developers. This happens also in Dutch municipalities, where municipalities generally wait for the conclusion of negotiations with the developers or landowners (Muñoz Gielen & Tasan-Kok 2010: 1121). In Switzerland, private developers could be required to draw up and to finance design plans (district plans), especially if the new development's main concern is not public space; nevertheless, a public authority is always responsible for the final validation of the plan (Gerber 2016: 197). So, "the performance of a municipality in the land market depends very much upon personal connections with landowners; [moreover,] because Swiss law does not provide public bodies a pre-emptive acquisition right in land deals and because financial details of land transactions are not public, the land market remains very opaque" (*ibid.*: 204). Weber (2010: 788) points out, regarding the State intervention, that it is difficult to restrict the rights of most landowners, due to the strong constitutional guarantee of ownership (art. 26), and it is thus "common to be faced by owners who do not wish − for various reasons − to develop their land according to what has been planned by municipalities". Tillemans et al. (2011: 2) argue that "this situation wouldn't be so problematic, if zoning didn't imply offering rights to selected landowners without any compensation being demanded in return".

Even if the basis of spatial planning in Switzerland is found in article 75 (spatial planning) of the Constitution (see also table 21, 4.3.3.), "The Confederation shall lay down principles on spatial planning. These principles shall be binding on the Cantons and serve to ensure the appropriate and economic use of the land and its properly ordered settlement", the article is however preceded by article 26 (guarantee of ownership) on property rights "The right to

own property is guaranteed. The compulsory purchase of property and any restriction on ownership that is equivalent to compulsory purchase shall be compensated in full". Moreover, article 641 of the Swiss Civil Code, centred on the nature of ownership, states that: "the owner of an object is free to dispose of it as he or she sees fit within the limits of the law and that he or she has the right to reclaim it from anyone withholding it from him or her and to protect it against any unwarranted interference". Therefore, since the private owner cannot be forced to develop his or her land, expropriation is rarely applicable and land remains undeveloped, sometimes leading to land hoarding and creating speculation on land rising prices. Weber (2010: 787) adds that the coordination between landowners' interests and spatial planning goals is the cornerstone of the whole process.

Yet, even though many Swiss municipalities own little land, since the land market remains in mostly private hands, they are developing an active policy in order to become more proactive in the management of their spatial development. An active land policy is a policy in which local authorities buy land, prepare it for development (both physically and institutionally) and then sell it off to property developers, housing associations and other property-developing actors (Needham 1997, Buitelaar & Bregman 2016: 5-6). This shift to a more active land policy "implies for planners a need to better support the implementation of land-use plans [...] with other policy instruments, in particular incentives or public intervention in property rights" (Gerber 2016: 192). In Switzerland, there has been a move towards an active land policy since the 2003 major revision of the Swiss Federal Law on Spatial Planning (Hengstermann & Gerber 2015). It is argued that the shift towards more active strategies is needed as the planning context is changing; reduced green field development and increased redevelopment are required (Tillemans et al. 2012). Indeed, Gerber (2016: 204) comments that public authorities may try to become landowners themselves so as to implement a more active land policy, despite the high financial burden.

It is important to remember that property rights are strongly protected in Switzerland by the Federal Constitution and the Swiss Civil Code, so that while expropriations are relatively uncomplicated in the case of construction for infrastructure and, to a lesser degree, also for military purposes, they are very difficult in most other cases (OECD 2017a: 206) and thus rare as noted above (see 4.3.3 and table 21).

Furthermore, as will be seen in chapter five, the analysis and application of the five OECD criteria to evaluate the performance of the Swiss spatial governance and planning system (5.2.2) would also seem to confirm this collocation of the Swiss governance and planning system within the neo-performative model.

4.6.3 Current and future scenario

Knoepfel (2016) observes that Swiss land use practices have changed from general zoning to huge specialised urban development projects (e.g. the Bern developments in 4.5.2), under special and frequently exceptional land use regimes (local regulatory arrangements), with the arrival of new powerful actors shaping local regulatory arrangements (e.g. promoters and investors). He notes that as a result today there is a strong property drive in the implementation of policy driven land use planning projects in their implementation phases, highlighting the dilemma of moving towards a new generation of property driven land use policies. Moreover, there are new legally binding economic tools in between property and policy driven strategies, shifting to an economic driven land use planning.

Although is too early to accurately measure the full effect of the 2013 revision of the Swiss Federal Law on Spatial Planning (which came into force in May 2014) on the strategies of planning authorities, Gerber (2016: 195) expects a shift towards a more active land use policy and an increasing recourse to private law instruments and managerial practices, "because they provide more freedom to the local administration and to private/corporate partners than strict regulation. Conversely, the importance of binding plans [typically zoning in daily land use planning practices] and full public property will [likely] decrease". In his view, this will be accompanied by higher public stakeholder participation in spatial development, with greater efficiency and intervention strategies which are more complex. Nevertheless, Gerber (*ibid.*: 206) also warns of the potential dangers facing local administrations in terms of "short-term solutions, reduced democratic participation and narrowly defined finance-centred objectives", which, according to him, they should take care to avoid. Carmona (2003b: 373) too warns of the danger of indicators that "have always reflected, and continue to reflect, short-term national priorities, rather than the long-term management requirements or political priorities of local planning authorities". Moreover, as noted in 2.1.7, short-termism in policy-making can have significant negative repercussions as regards social equity.

A further point is linked to the changing scenario as regards the hard boundaries between political alignments and the public and private sector which has taken place in the country. Devecchi (2012), for example, emphasises the crucial impact on urban development in Zurich due to the political transformations of the 1990s overcoming the political polarisations and conflicting agendas of the public and private stakeholders. Koll-Schretzenmayr et al. (2008) describe and discuss the changing socio-spatial dynamics in residential development in Zurich, pointing out the changes that are taking place and paying attention to the social transformation and polarisations, as well as possible inequalities due to redevelopment practices and gentrification. Currently, there seems to be increasing use of public-private partnerships (PPP) in the Swiss

planning system. Gerber has investigated the effects of the New Public Management (NPM) reforms on the spatial planning of municipalities, interviewing politicians, planners and public real-estate managers and provides the following comment (2016: 202):

> *Interviews reveal an ambiguous attitude toward PPP. Many municipalities have entered into partnerships with private service providers, but few have done so in connection with spatial development issues. Although almost all authorities pretend to be open to PPP, which is in line with NPM precepts, there is a clear skepticism about the long-term effects of such partnerships (particularly concerning responsibilities if the private partner defaults or goes bankrupt). Ultimately, it appears that municipalities only enter PPP if they have no other choice, i.e. no possibility of financing targeted development on their own.*

Some of the issues looked at in this section will be returned to in chapter six, in the light of the findings and discussion presented in chapter five.

Chapter 5

Spatial governance, planning and well-being

In this chapter, the main hypotheses of the present research are tested in order to see whether and how spatial planning influences well-being. In the first section (5.1), the concepts of economic, environmental and social well-being performance are introduced, for each of them focusing specifically on the case of Switzerland, respectively in 5.1.1, 5.1.2 and 5.1.3. Then, in 5.1.4, national, regional and local well-being in Switzerland are analysed and discussed in terms of a number of indicators, mainly the OECD Better Life Index and Urban Audit 2016. For local well-being the indicators examined are: income and jobs, housing conditions, health, education, environmental quality, personal security, civic engagement, work-life balance, infrastructure and services, mobility, culture and leisure. The chapter then looks at the impact of the Swiss spatial governance and planning system on the country's well-being (5.2). Starting from a broader approach, first applying the five OECD evaluation criteria in order to evaluate the overall performance of the Swiss spatial governance and planning system, the research lens is then progressively focused so as to examine, also using Gleeson's six methodological pointers (5.3.1), the specifically place-based nature of well-being in the country. The aim is to see how the Swiss spatial governance and planning system contributes to the country's achievement of a high ranking on the international well-being performance scales, concentrating on evaluation and measurement in terms of interactions, outcomes and indicators; in particular, the five ESPON TANGO dimensions are then looked at (5.3.2) in order to explore the interface between good spatial governance and planning and sustainable well-being. The investigation continues in 5.3.3, which also presents a practical

example through a case study from Canton Ticino, in order to illustrate more in detail some of the relationships pointed out in the previous sections.

5.1 Framework conditions and well-being performance in Switzerland

Switzerland ranks high in the various international economic, environmental and social indexes, showing that the country has very favourable framework conditions. Indeed, in 1996 Jean-Pascal Delamuraz, the President of the Confederation presented the Swiss Planning Policy Guidelines (*Grundzüge der Raumordnung Schweiz*) with the following words (Scholl 2008: 81):

> *Our country is pleased to possess […] a high level of prosperity in international comparison. The extent of the infrastructure is excellent, the standard of living is good on the whole, the choice of education, leisure and cultural pursuits is broad and of high quality. Prosperity and social and demographic developments, however, bring about changes to the living space that have to be dealt with […] In terms of habitat and economic space, naturally, the countryside not only houses most of the agricultural industries, but also the small and medium-size businesses in the industrial/ commercial sector that are so important for our country. Furthermore, the rural areas fulfil a recreational function for the interests of tourism and the urban population. All in all, the countryside is of central importance for ecological balance and resource protection.*

Because this observation is made by the President of the Swiss Confederation it is necessarily somewhat hyperbolic – in his role he must maximise his nation's success. Nevertheless, accepting that he might be overstating the case a little, it is a very strong statement endorsing the high standard of living and QoL (thus well-being) of Switzerland. This statement was made in 1996; just over twenty years later there is no reason to suggest that the country's high prosperity has changed. However, President Delamuraz also pinpoints some important aspects that need to be kept in mind: changes in living space due to social, economic and demographic developments, the need for protection of rural areas and resources.

More recently and from a neutral position, the OECD (2011: 113) observes in its Territorial Review of Switzerland that the framework conditions are of excellent quality, commenting that the country's "good macroeconomic situation, the political and regulatory stability, the relative strength of the financial system, a favourable tax system, a well-educated and multilingual population, a flexible labour market, and high standards of living, all contribute to the attractiveness of the country both from individual and from company perspectives".

Nevertheless, the country does face a number of critical issues: pressure on land use, urban development, the changing nature of rural communities, its relations with its EU neighbours. Moreover, spatial planning practices are

currently changing rapidly in Switzerland, also due to an increasingly accelerating urbanisation process. For example, there is a need to increase urban density as well as to improve quality standards and renew old infrastructures, which is extremely complex since the availability of land is scarce. So, as is happening also in many other countries, public authorities and other governmental bodies are facing new challenges and collaborating on shared projects. However, as elsewhere, the solutions to some of the common critical issues such as sprawl reduction and mixed-use redevelopment are still in a phase of experimentation and, as observed in chapter two (2.1.4), scholars question the efficiency of development patterns which often lead to a loss of subjective well-being. It should also be kept in mind that "changes in basic framework conditions, whether they are social, economic, ecological, technological or cultural in nature demand great flexibility from planning systems, although a distinction should be made here between comprehensive breaks and gradual adaptation strategies" (Reimer et al. 2014: 10).

In order to carry out a more objective and selective analysis of the current situation, attention is focused on 'context indicators', which generally reflect long-term trends and provide significant aspects of the state of the economy, the environment and the society in a given country. For the OECD (2009: 33), "context indicators provide information on the environment in which regional policies must operate". Thus, the indicators discussed in the next sections may also help describe the current situation, the general context and the trends in which policy measures are designed, planned and implemented. Moreover, these indicators help to identify not just strengths but also weaknesses in the light of the overall economic, environmental and social trends. There is also a danger in using such indicators in comparative studies, since, "when comparing *social status* and *societal response* indicators, it is easy to end up making statements that one country is doing badly relative to other countries, or that another is spending a lot of money on a specific policy target compared with others" (OECD 2005: 15, original emphasis).

5.1.1 Economic performance

Switzerland has an international reputation for having a wealthy and successful economy, with low unemployment and a highly skilled labour force. Not surprisingly, in terms of economic data, Swiss GDP per capita (see 3.3.2) is among the highest in the world (79,890.524 GPD per capita in 2016, The World Bank, available at: <https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=CH>, accessed on 4 January 2018). Moreover, as regards the Global Innovation Index (GII, see 3.3.3), the economy of Switzerland was ranked first (out of 127 countries) in 2017.

The Swiss economy also benefits from a strong financial services sector and high-technology industry, centred on the internationally recognised economic

hubs of Zurich and Geneva. Nevertheless, as demonstrated in the OECD Territorial Review on Switzerland (OECD 2002: 29), "value added per capita is unevenly distributed across the different cantons", largely because there is not an even distribution of the economic sectors and of industries. Thus, the highest GDP per capita can be seen in the urban hubs of Basel, Geneva, Zurich and Lugano, whereas the rural areas, especially those in north-eastern and western-central Switzerland, have an industrial structure which is less robust. Moreover, there is a low value added per capita in the Alpine regions, even though these regions depend highly on tourism, revealing that "the tourism service sector, despite its importance for the Swiss economy and its importance for employment in these areas, produces relatively little value added compared to other sectors" (*ibid.*: 30). In fact, according to the Territorial Review, the Swiss value added indicator, like that in other countries, shows there is a strong correlation between value added per capita and centrality (i.e. proximity to metropolitan areas). Nevertheless, comparative data for all OECD countries reveal that Switzerland belongs to the group of countries with the lowest disparities and lowest regional concentration. "The statistics show the territorially decentralised nature of the Swiss federation with no single centre of gravity; [for example,] the fact that the political capital (Bern) is distinct from the economic capital (Zurich) may partially explain lower disparity and low regional economic concentration" (*ibid.*: 36). Moreover, economic practices in Switzerland have gradually come to conform with the neighbouring EU countries, thus improving international competitiveness and enabling the country to weather the global financial crisis post 2008 comparatively well. Yet, some forms of trade protectionism remain, in particular as regards the agricultural sector where domestic production is encouraged by high tariffs and extensive domestic subsidies. In January 2015 Switzerland abandoned its pegged currency with the Euro which certainly led to some significant short term repercussions on its economy, for example in the tourism sector.

5.1.2 Environmental performance

Switzerland ranks very high in the 2016 Environmental Performance Index (EPI, see 3.3.4): 16th out of 180 countries with a total score of 86.93. Yet, despite Switzerland's high ranking, it has declined in 2016 (it was the top EPI performer in 2014, see also table 27). The EPI 2016 report explains that this sharp drop reflects the 2016 index's improved methodology and the use of new indicators. For example, Finland's current top ranking (90.68) is due to the country's aim to achieve a carbon-neutral society by 2050, through actionable goals and measurable indicators of sustainable development. In fact, "Finland's goal of consuming 38 percent of their final energy from renewable sources by 2020 is legally binding, and they already produce nearly two-thirds of their electricity from renewable or nuclear power sources" (EPI 2016a: 111).

Table 27: Swiss 2016 EPI rankings (EPI 2016b)

Name of indicator	Score	Rank
Health impacts	79.31	66
Air quality	72.09	127
Water and sanitation	99.93	9
Water resources	98.23	6
Agriculture	94.06	63
Forests	83.96	17
Fisheries	-	-
Biodiversity and habitat	90.43	49
Climate and energy	82.53	35

The reasons why some nations, such as Switzerland and Germany, have fallen in the rankings despite their traditionally good environmental records can be strongly linked to the 2016 EPI's more robust and accurate air quality measures. For example, although Switzerland and Canada show safer conditions as regards sanitation, water and household air quality, their outdoor air pollution risk factors are at the same level as those in Congo (EPI 2016a: 37-38, figure 14).

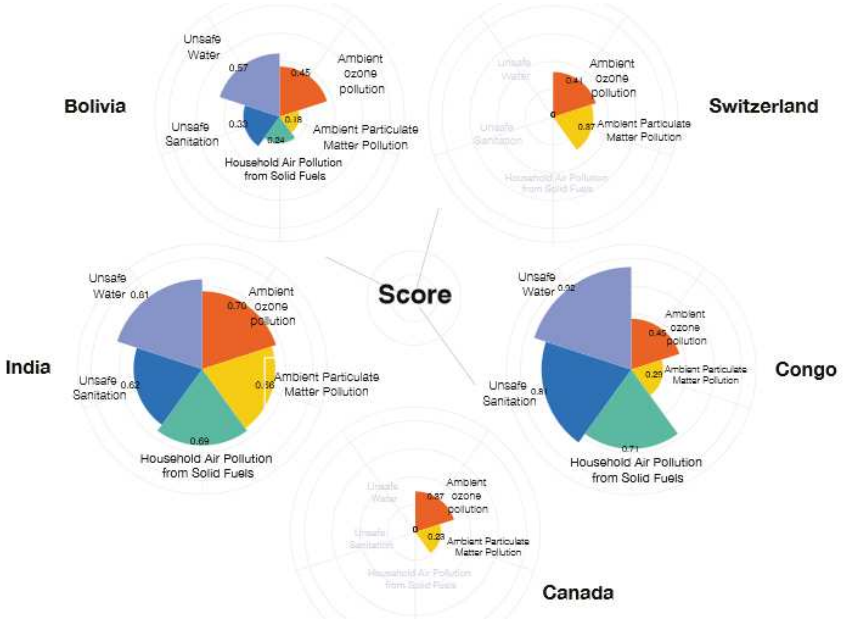


Figure 14: Health exposure risk factor scores for five countries (EPI 2016a: 37)

Two aspects of environmental performance seem to be particularly relevant. First, there is considerable empirical evidence (OECD 2002: 96) "that urban sprawl increases per capita costs for infrastructure such as water, electricity or waste disposal. Since many of these costs are not covered by individual charges but paid by tax contributions, urban sprawl creates various externalities for the general public." Second, the external costs of transport and settlement structure

are closely related and influence each other. There is again considerable evidence that private transport causes more external costs (e.g. various kinds of pollution and related health issues) and at the same time gives rise to dispersed settlements, while public transport generally alleviates these tendencies (*ibid.*: *96*). In general terms, urban sprawl has been defined as (Jaeger et al. 2010: 399):

> [...] *a phenomenon that can be visually perceived in the landscape. The more heavily permeated a landscape by buildings, the more sprawled the landscape. Urban sprawl therefore denotes the extent of the area that is built up and its dispersion in the landscape. The more area built over and the more dispersed the buildings, the higher the degree of urban sprawl. The term 'urban sprawl' can be used to describe both a state (the degree of sprawl in a landscape) as well as a process (increasing sprawl in a landscape).*

Urban sprawl has received considerable scrutiny in the Swiss context and, as seen in chapter four (4.4), was a major theme in the referendum of 2013 and the ensuing spatial planning reform. Indeed, the sprawl issue had already been considered serious before the Second World War, but because of the building taking place in the 1960s, 1970s and 1980s, followed by the growing awareness of the need to conserve the country's landscape, it became a focus of national concern. The seriousness of the sprawl issue in Switzerland is not to be underestimated (see also 2.3.2). Jaeger and Schwick (2014) have developed the Weighted Urban Proliferation (WUP) method (index) for measuring urban sprawl (3.4.4). They have showed that there is a higher level of sprawl, when more area is built up, where there is more dispersion of buildings in the landscape, and where there is a lower utilization intensity of built-up areas (i.e. there is a higher land uptake per inhabitant or job). Commenting on their work, Ivan Tosics (2014), URBACT Thematic Pole Manager, points out that the results for Switzerland show a dramatic picture. It would seem "that between 1935 and 2002 urban sprawl in Switzerland increased by 155% (with the sharpest increase between 1960 and 1980). […] The forecasts for 2050 show that, with no change in current conditions, sprawl in Switzerland would increase again with the high pace experienced in the 1960s and 1970s. This would lead to dramatic negative consequences regarding land cover, local climate, emissions and pollutions, water and groundwater, flora and fauna. Also the economic effects would be substantial as the costs of public services are much higher in sprawled areas".

Nevertheless, recent evidence on land use trends in Switzerland from OECD calculations based on the Corinne Land Cover dataset reveals that since 2000 developed land has in actual fact increased very little "at least insofar as can be observed on the available satellite-imagery" (OECD 2017a: 207). However, the problem remains serious, firstly because land use is more constrained in Switzerland due to the country's mountainous terrain, and secondly because of the increase in the Swiss population. Indeed, the amount of developed land per capita

has decreased by approximately 0.8% annually since 2000, the second highest decline in the OECD behind Luxembourg (OECD 2017a). Per capita use of developed land is slightly below the OECD average.

5.1.3 Social performance

As well as balancing economic and environmental issues, social equity is the last but not the least important of the three dimensions comprising sustainable development (see figure 1 in 2.2.2). In 1996, the United States President's (Bill Clinton's) Council on Sustainable Development defined social equity as "equal opportunity, in a safe and healthy environment". However, the level of inequality within a country, region or a community is an aspect that often is not subject to sufficient scrutiny. The overall level of inequality is often linked to the general distribution of income, consumption or other monetary factors, but inequality may also be calculated for the distribution of a number of other variables, for example, for land ownership and land use. Yet, income inequalities are among the most visible manifestations of the differences in living standards within each single country. In fact, the presence of high income inequalities generally indicates a waste and an inefficient use of human resources, as it signifies a large proportion of the population being unemployed or trapped in poorly paid and low or unskilled jobs.

In any case, as regards the Gini coefficient (3.3.5), Switzerland ranks quite well in the global analyses although its coefficient is below-average (29.4 in 2016, Eurostat). While, on the Human Development Index (HDI, 3.3.6), according to the HDI 2016 Report, Switzerland's HDI value for 2015 is 0.939, placing the country in the very high human development category. In fact, Switzerland comes second (the rank is shared with Australia) out of 188 countries and territories. Its "2015 HDI of 0.939 is above the average of 0.892 for countries in the very high human development group and above the average of 0.887 for countries in the OECD" (HDI 2016a: 4). As shown in table 28, between 1990 and 2015, Switzerland's HDI value increased from 0.831 to 0.939, an increase of 13.0 percent.

Table 28: Human Development Index trends, 1990–2015 (based on HDI 2016b: 202)

HDI value							
1990	2000	2010	2011	2012	2013	2014	2015
0.831	0.888	0.932	0.932	0.934	0.936	0.938	0.939

The HDI survey also provides a section on supplementary indicators of people's perceptions of well-being. As can be seen in table 29, Switzerland shows high levels of perceived well-being. In fact, the Swiss standard of living value

(94) ranks first of the 188 analysed countries, as well as first in the overall life satisfaction index (7.6 out of 10, the rank is shared with Norway).

As regards the perception about the government (table 30), the country also shows positive scores. Indeed, Switzerland ranks first in actions to preserve the environment (one of the concerns driving the 3 March 2013 referendum, see 4.3 and 4.4.1), and second in trust in the national government (reflecting the country's strong ongoing tradition of direct democracy, 2.3.3, 2.3.6, 5.2.2 and 5.3.1.5).

Table 29: Perceptions of well-being (based on HDI 2016b: 250)

Perceptions of individual well-being (2014-2015)							
Education quality	Health care quality	Standard of living	Ideal job	Feeling safe	Freedom of choice		Overall life satisfaction, index
% satisfied	% satisfied	% satisfied	% satisfied	% satisfied	% satisfied		0-10
					Female	Male	
83	93	94	84	87	93	92	7.6

Table 30: Perceptions about government (based on HDI 2016b: 250)

Perceptions about government (2014-2015)		
Confidence in judicial system	Actions to preserve the environment	Trust in national government
% satisfied		
82	84	79

Overall, it emerges from the study that good (economic, environmental and social) framework conditions would seem to favour the spatial governance and planning of a country, in this case Switzerland, even if they are not the only determining factor.

5.1.4 Well-being indicators in detail

5.1.4.1 National well-being

As mentioned before (2.3.5), Switzerland generally performs well in terms of the OECD's well-being indicators (available at <http://www.oecdbetterlifeindex.org/countries/switzerland/>, see also table 31). In particular, 80% of the population aged 15-64 is in employment (the second highest percentage in the OECD), while life expectancy is 83 years (also among the highest in the OECD) and life satisfaction in Switzerland (9.9 out of 10, table 31) is again among the highest in the OECD. In terms of housing conditions, Switzerland performs very well as regards access to basic sanitation. Yet, the OECD Better Life Index points out that

households in Switzerland spend a relatively large proportion of their available income on accommodation, indicating the low affordability of housing. Moreover, the electoral turnout in Swiss parliamentary elections is only 49% (one of the lowest voter turnouts in the OECD); however, this indicator does not take into account the highly participatory nature of Switzerland's form of direct democracy.

Table 31: National well-being in Switzerland, based on <http://www.oecdbetterlifeindex.org/countries/switzerland/> (accessed on 3 January 2018)

Well-being dimension	Ranking
Housing	7.0
Income	7.5
Jobs	9.2
Community	8.1
Education	7.1
Environment	7.4
Civic engagement	3.4
Health	9.1
Life satisfaction	9.9
Safety	9.6
Work-life balance	7.2

5.1.4.2 Regional well-being

For the OECD (2014: 19), regional well-being metrics can also improve policy-making and policy coherence. Indeed, it observes (*ibid.:* 15) that such indicators can help regions identify their relative strengths and weaknesses in well-being, monitor trends and compare them with those in other places. The table below (table 32) shows the relationship between the various well-being dimensions and the regional areas of Switzerland (figure 15, see also table 8, section 4.2).

Table 32: Regional well-being in Switzerland, based on <https://www.oecdregionalwellbeing.org/> (accessed on 3 January 2018)

Well-being dimension	Lake Geneva region	Espace Mitteland	Northwestern Switzerland	Zurich	Eastern Switzerland	Central Switzerland	Ticino
Education	8.2	8.5	8.9	8.8	8.4	8.5	8.4
Jobs	8.1	9.7	9.7	9.8	10.0	9.9	7.9
Income	4.9	4.6	5.4	6.3	4.8	5.3	4.5
Safety	9.1	9.3	10.0	10.0	10.0	9.1	10.0
Health	9.6	8.6	9.3	9.2	8.8	9.4	9.9
Environment	3.7	4.3	2.3	2.3	3.6	4.8	2.2
Civic engagement	0.0	0.4	0.3	0.1	0.1	1.5	1.8
Access to services	8.7	8.1	9.0	9.9	9.0	9.0	7.5
Housing	3.3	4.4	4.4	3.9	5.0	4.4	4.4
Community	9.0	9.4	9.5	8.7	9.6	9.5	7.1

Life satisfaction	8.5	8.9	8.5	9.6	10.0	10.0	8.1

In fact, as can be observed in the table above, the region which scores highest in terms of well-being is the Eastern Switzerland region, which ranks top for housing (5), life satisfaction (10), jobs (10), community (9.6) and safety (10). Even though the Ticino region ranks top in terms of civic engagement (1.8), health (9.9) and safety (10), it also presents the lowest scores in terms of life satisfaction (8.1), access to services (7.5), jobs (7.9), community (7.1), environment (2.2) and income (4.5). The Lake Geneva region scores lowest as regards housing (3.3), civic engagement (0), education (8.2) and safety (9.1). Moreover, the canton of Valais (located within the Lake Geneva region, see also 4.4.3) has the largest area of building plots per capita in Switzerland and is the only canton where 70 per cent of the population are home owners (the Swiss average is 40 per cent). Yet, the housing quality is in a worse situation compared to the other Swiss cantons. The Zurich regions scores top for access to services (9.9), income (6.3) and safety (10). The Central Switzerland region ranks top for life satisfaction (10) and environment (4.8). The Northwestern region scores top for education (8.9) and safety (10). Four Swiss regions rank top in safety: Ticino, Eastern Switzerland, Zurich and Northwestern Switzerland; and two regions rank top in life satisfaction: Central Switzerland and Eastern Switzerland. Espace Mittelland scores lowest in health (8.6).

Some of the regional areas which score highly in some categories have low scores in others. For example, although the Ticino shows the highest level of civic engagement in Switzerland, and a very good level of education (see table 32 above), it shows the lowest level of environmental quality in Switzerland and the lowest level of job quality in Switzerland, as well as the lowest income. The high level of civic engagement in the Ticino can be seen in action in the case study on the *Progetto Foce del Cassarate e Parco Ciani* (5.3.3.1) and also seems to affect the level of life satisfaction.

Indeed, as seen in chapter two (2.3.6), Frey and Stutzer's (2000) study on Swiss cross-regional differences in happiness showed that there were significant correlations between language variables (see also figure 15 below) and reported satisfaction with life. They found that those residing in the Italian speaking canton Ticino reported significantly higher levels of subjective well-being than those living in a French speaking canton. However, they also suggested "the lower well-being in the French speaking cantons can to a large extent be explained by weaker direct democratic rights" (*ibid.*: 18). This links with the OECD findings: as can be seen in the table, the Lake Geneva regions scores lowest in civic engagement (0), whereas the Ticino region has the highest value (1.8).

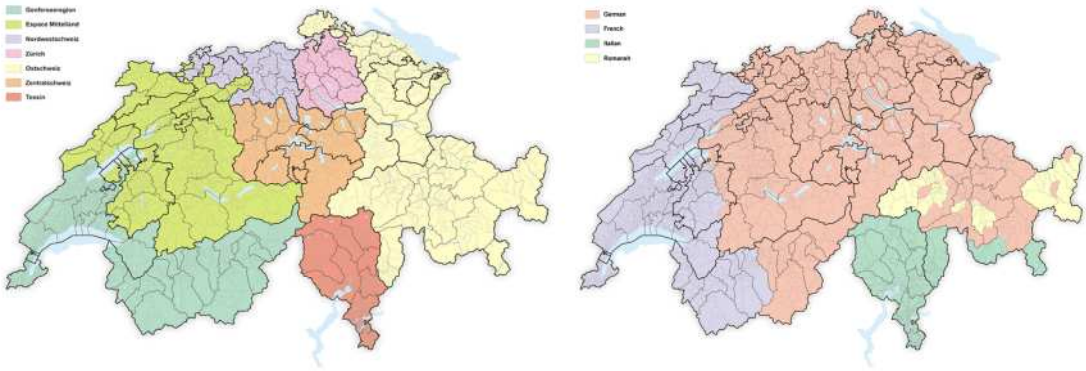


Figure 15: The statistical (left) and language speaking regions (right) of Switzerland (maps retrieved from wikipedia on 6 January 2018)

5.1.4.3 Local well-being

For the OECD, local issues are the factors that most influence peoples' well-being. Therefore, "people's well-being is shaped by a combination of individual traits and 'place-based' characteristics" (OECD 2014: 25).

In the 2017 international Quality of Living rankings analysis carried out by Mercer <https://www.mercer.com/newsroom/2017-quality-of-living-survey.html> Zurich (2 out of 450 cities), Geneva (8 out of 450 cities) and Basel (14 out of 450 cities) are among the top ten cities in the world with the best QoL. The tables below present and discuss some of the information and data made available through the work carried out by the Urban Audit 2016 (FSO 2016), in line with the OECD framework for measuring well-being (see 3.4.2.2). The data, as pointed out, specifically refers to eight Swiss cities: Zurich, Geneva, Basel, Bern, Lausanne, Lucerne, St. Gallen and Lugano. The objective and subjective dimensions of well-being examined at the local level are: income and jobs, housing conditions, health, education, environmental quality, personal security, civic engagement, work-life balance, infrastructure and services, mobility, culture and leisure. In particular, the values displayed in the tables below go from 1 (the highest score) to 8 (the lowest score).

1. Income and jobs

Income and jobs are objective dimensions of well-being, which allow the local population both to cover personal and basic needs and to accumulate wealth. The following employment indicators are taken into consideration to have a more holistic view of the current local well-being in the eight Swiss municipalities:

- economic activity rate, 2015 (share of 15−64 year-olds in the permanent resident population who participate in the labour market)
- part-time employment, 2015 (share of employed persons with a work-time percentage of <90%)

- unemployment rate, 2015 (share of registered unemployed in total economically active population)
- social assistance rate, 2014 (share of social assistance recipients among permanent resident population)

Table 33: Income and jobs (based on Urban Audit, FSO 2016: 6-9)

cities	economic activity rate	part-time employment	unemployment rate	social assistance rate
Bern	1	1	7	4
Basel	7	3	5	3
Geneva	6	6	2	2
Lausanne	5	7	1	1
Lucerne	3	4	8	8
Lugano	8	8	4	7
St. Gallen	4	2	6	6
Zurich	2	5	3	5

The net activity rate in table 33 shows labour market participation. As can be observed, the economic activity is higher in the municipalities of Bern and Zurich but is lower in those of Basel and Lugano. However, as explained in the Urban Audit (FSO 2016: 7), part-time employment can have both positive consequences (e.g. additional time for a better work-life balance, leisure and personal fulfilment) and negative consequences (e.g. lower income, less promotion opportunity, fewer continuing education and training possibilities, reduced pension fund contributions). As shown in the table, Bern and St. Gallen have the highest part-time employment rate whereas Lausanne and Lugano present the lowest. Moreover, part-time employment is also important for gender equality. In fact, in Switzerland the share of employed persons with a work-time percentage is much higher for women than men.

The unemployment rate is higher in the cities of Lausanne and Geneva but lower in Bern and Lucerne. In the cities where this rate is higher, people are at a higher risk of social exclusion, segregation and of poverty. Moreover, unemployment in the long-term could badly impact on health and personal fulfilment. As regards the social assistance rate, which ensures basic needs and enhances individual and economic independence, it is higher in the Swiss French speaking cities of Lausanne and Geneva but lower in the German speaking city of Lucerne. Moreover, a good social assistance policy promotes social inclusion, integration and provides a better social safety net.

2. Housing conditions

Apart from income and jobs, also good housing conditions are important in order to help people fulfil their basic needs (e.g. safety, privacy and family). However, high housing costs due to the specific land use, urban structure and policies may have a negative influence on people's well-being, leading them to social exclusion

and segregation. The following housing indicators are taken into consideration in order to evaluate the current local well-being in the eight Swiss municipalities:

- single-family houses, 2015 (share in total dwellings)
- overcrowded dwellings, 2015 (share of occupied dwellings with more than 1 person per room)
- dwelling vacancy rate, 2015 (share of empty dwellings in total number of dwellings)
- traffic noise, 2012 (share of the population disturbed in the night by >55 dB(A)1 (decibels)

Table 34: Housing conditions (based on Urban Audit, FSO 2016: 10-13)

cities	single-family houses	overcrowded dwellings	dwelling vacancy rate	traffic noise
Bern	4	2	5	5
Basel	3	4	6	2
Geneva	8	1	4	1
Lausanne	7	3	8	3
Lucerne	6	8	2	6
Lugano	1	6	3	8
St. Gallen	2	7	1	7
Zurich	5	5	7	4

For the Urban Audit (FSO 2016: 10), single-family houses generally imply a higher average per capita living space and a private garden. The percentage of single-family houses is strongly related to the city structure. In fact, single-family houses usually have a higher demand on space, which is therefore not available for other forms of land use. As can be seen in table 34, the cities of Lugano and of St. Gallen present the highest score of single-family houses, whereas Lausanne and Geneva have the lowest.

The overcrowded dwellings indicator points out the negative effect of insufficient housing space which may also have a negative effect on people's education, health and working performance. The municipalities of Geneva and Bern show the highest numbers of overcrowded dwellings, whereas the cities of St. Gallen and of Lucerne have the lowest. The Urban Audit (*ibid.*: 12) explains that a high dwelling vacancy rate indicates where accommodation is easier to find and directly influences the housing price. An insufficient housing supply leads to an increase in housing prices, makes people move to the suburbs or to a different neighbourhood and leads to longer daily commutes, which negatively impacts on people's QoL. Moreover, the time spent searching to find accommodation takes time which could be otherwise be spent on leisure activities. As regards the dwelling vacancy rate, St. Gallen and Lucerne rank top whereas Zurich and Lausanne score the lowest.

Traffic noise pollution can have negative effects on health, housing conditions and life satisfaction. The Urban Audit (*ibid.*: 13) highlights a gap in the data at the city level in relation to train and plane traffic, which it could be very useful to fill in order to identify and map traffic noise at the city level. As regards traffic noise, Geneva and Basel have the highest level whereas St. Gallen and Lugano score the lowest.

3. Health

Health is among the most important factors for people's well-being. Health is strongly influenced by a good work-life balance (see point 8 below) and a high environmental quality (see point 5 below). If people have good health they may be more active in participating in the labour market and in social life. The following healthcare indicators are taken into consideration to provide an overview of the current local well-being in the eight Swiss municipalities:

- practising doctors (per 1000 inhabitants)
- mortality rate of under 65 year-olds (crude mortality rate due to diseases of the circulatory or respiratory systems per 100,000 inhabitants, average from 2011 to 2014)
- suicide rate (crude suicide rate per 100,000 inhabitants (excluding assisted suicide), average from 2011 to 2014)

Table 35: Health (based on Urban Audit, FSO 2016: 14-16)

cities	practising doctors (2015)	mortality rate of under 65 year-olds	suicide rate
Bern	1	5	1
Basel	5	2	7
Geneva	7	8	6
Lausanne	2	3	5
Lucerne	4	6	2
Lugano	8	1	8
St. Gallen	3	7	3
Zurich	6	4	4

The percentage of practising doctors in the resident population indicates the health services present in a city. Some cities have a central hospital which provides health care for the entire region and tend to have a higher density of doctors (FSO 2016: 14). The cities of Bern and Lausanne present the highest density of practising doctors, whereas Geneva and Lugano have the lowest density (table 35). Overall, there has been an increase in the number of practising doctors since 2012 (*ivi*).

Deaths under the age of 65 are due to many causes (e.g. accidents, genetic factors, individual health behaviour), which are also linked to the quality of the local environment. The Urban Audit (*ibid.*: 15) data shows that there is a discrepancy between men and women which may be explained by many causes (e.g. consumption of tobacco and alcohol, obesity). The mortality rate of under 65

year-olds is higher in Lugano and Basel whereas it is lower in St. Gallen and Geneva. The suicide rate is used by the Urban Audit as an indicator for the subjective perception of the local QoL. In fact, people at risk of suicide need a strong professional support as well as a stable social environment. The cities of Bern and of Lucerne present the highest suicide rates, whereas Basel and Lugano the lowest. Moreover, there is again a strong discrepancy between men and women, since a higher number of men commit suicide than women (*ibid.*: 16).

4. Education

Education is an important dimension of well-being since it can open up better job opportunities on the labour market and it can help people to deal better with economic and social changes. The following indicator is taken into consideration as part of the evaluation of the current local well-being in the eight Swiss municipalities:

- educational attainment of the population, 2015 (permanent resident population, between 25 and 64 years of age, by highest completed education or training)

Table 36: Education (based on Urban Audit, FSO: 2016: 17)

cities	**educational attainment of the population (compulsory education)**
Bern	8
Basel	5
Geneva	2
Lausanne	1
Lucerne	6
Lugano	4
St. Gallen	3
Zurich	7

The educational attainment of the population index shows the number of people and their level of qualification available for the labour market. Good levels of education may increase civil awareness and social and political engagement and participation. For its study, the Urban Audit has taken into consideration the compulsory education, the upper secondary education and the tertiary level education. In particular, post-compulsory education may also improve the chances of having better paid jobs in the labour market. The table above (36) focuses on the compulsory level of education in Switzerland; the cities of Lausanne and Geneva rank top for compulsory education, whereas Zurich and Bern rank lowest. The Urban Audit data (FSO 2016: 17) also shows that tertiary level education is higher in the cities of Zurich, Bern, Geneva and Lausanne.

5. Environmental quality

Environmental quality is an important dimension that can improve the QoL of the local community. Thus, people's well-being is influenced by the quality of the

local environment. For example, a highly contaminated environment directly affects the mental and physical health of the population. The following environmental quality indicators are taken into consideration as part of the analysis of the current local well-being in the eight Swiss municipalities:

- wooded and recreational areas, 2004/09 (share of total surface area)

- long-term pollution index (population weighted mixed index of air quality, based on concentrations of particulate matter (PM10), nitrogen dioxide (NO2) and ozone (O3)

Table 37: Environmental quality (based on Urban Audit, FSO 2016: 18-19)

cities	wooded and recreational areas	long-term pollution index (2011)
Bern	3	4
Basel	8	3
Geneva	7	2
Lausanne	2	6
Lucerne	6	7
Lugano	1	1
St. Gallen	5	8
Zurich	4	5

As explained above, a higher number of green areas in cities offers people a place for leisure and sports, without having to travel long distances. However, the share of available green areas may be shaped by a city's institutional and administrative boundaries, as well as historical background (FSO 2016: 18). The wooded and recreational areas indicators shows that the municipalities of Lugano and of Lausanne present the highest values, whereas those of Geneva and Basel have the lowest.

The long-term pollution index pinpoints the average air pollution of towns and cities. The index is based on concentrations of particulate matter (PM10), nitrogen dioxide (NO2) and ozone (O3), which have a direct impact on the environment and on human health. Table 37 shows the long-term pollution levels in 2011. The city of Lugano presents a very high level of long-term pollution, as does Geneva. The cities of Basel, Bern, Zurich and Lucerne present high levels of pollution. The city of St. Gallen is polluted but presents lower values. Somewhat surprisingly considering the high profile given to reducing pollution levels in Switzerland, they actually increased between 2007 and 2011 in the French speaking cities of Geneva and Lausanne (ibid.: 19). The recent OECD Environmental Performance Review (OECD 2017b: 23) notes that "overall air quality has improved significantly but not enough to protect people and ecosystems". Also, in areas of heavy traffic, levels of PM10 and NO2 are still above the legal ambient limit values.

6. Personal security

Security is an important dimension of well-being, and it can be influenced by the crime levels, the number of traffic accidents and the risk of natural hazards. Moreover, it may cause people to experience higher levels of anxiety and stress. The following security indicators provide practical information on the current local well-being in the eight Swiss municipalities:

- violent crimes, 2015 (share of violent crimes in the main categories)

- burglaries in dwellings, 2015 (number of burglaries with intrusions in dwellings per 1000 inhabitants)

- road accident victims (number of persons seriously injured or killed per 10,000 inhabitants, average from 2011 to 2015)

Table 38: Personal security (based on Urban Audit, FSO 2016: 20-22)

cities	violent crimes (assault)	burglaries in dwellings	road accident victims
Bern	5	3	7
Basel	3	6	6
Geneva	7	1	1
Lausanne	1	2	4
Lucerne	2	5	6
Lugano	8	8	2
St. Gallen	4	7	8
Zurich	6	4	3

People's sense of security in an urban environment is influenced by the number of crimes. In fact, a feeling of insecurity might affect people's daily habits and life satisfaction, as well as their mobility routes and housing location. The violent crimes index takes into consideration the share of violent crimes in the main categories of the Swiss Penal Code: assault (art. 126), menace (art. 180), bodily harm (art. 122 and 123), menace and assault against civil servants (art. 285), robbery (art. 140) and the rest. Table 38 above mainly focuses on the assault ranking; as can be seen, the cities of Lausanne and Lucerne present the highest number of assaults, whereas the cities of Geneva and Lugano the lowest.

The number of burglaries with intrusions in dwellings is higher in the municipalities of Geneva and Lausanne, whereas in St. Gallen and Lugano they are lower. This phenomenon has a direct impact on the QoL of people since they may no longer feel secure in their own houses and might choose to move to a different neighbourhood. For the Urban Audit (FSO 2016: 21), cities are an important node of human activity, which can depend on factors such as a city's size or its location, and which should be considered separately from the size of its population, in the interpretation of statistical data on violent crimes and burglaries.

The road accident indicator takes into consideration the number of persons seriously injured or killed. This indicator strongly affects people's well-being

since traffic accidents can lower a driver's feeling of security and influence people's choice of means of transportation. The cities of Geneva and Lugano present the highest number of road accidents, whereas Bern and St. Gallen have the lowest number.

7. Civic engagement

According to the Urban Audit (FSO 2016: 23), in terms of civic engagement at city level, presently either no suitable data are available or are derived from sources other than official statistics. In any case, civic engagement is an important element of people's well-being. In fact, by participating in political and social life, citizens can express their needs and actively contribute to political decisions and policy-making. Moreover, better involvement in political and social processes leads to more informed citizens and better acceptance of political decisions. Thus, civic engagement fosters citizens' confidence in government and political institutions, which improves happiness and life satisfaction (see also Frey and Stutzer 2000, 2.3.6 and 5.1.4.2).

8. Work-life balance

A good work-life balance positively influences well-being, since it contributes to the productivity in the work place and helps people to be happy and healthy. The following indicators on the work-life balance also help provide a more holistic view of the current local well-being in the eight Swiss municipalities:

- care of infants (children cared for with pre-school age (0−3 year-olds), per 1000 children in this age group)

- availability of child care for infants, 2016 (total and subsidised places for children of pre-school age (0-3 year-olds), per 1000 children in this age group)

- length of commute, 2015 (average length of journey from home to work, in minutes)

Table 39: Work-life balance (based on Urban Audit, FSO 2016: 24-26)

cities	care of infants (2016)	availability of child care for infants (total)	length of commute
Bern	8	5	2
Basel	3	1	6
Geneva	4	3	4
Lausanne	2	4	3
Lucerne	5	7	5
Lugano	6	6	8
St. Gallen	7	8	7
Zurich	1	2	1

The care of infants index takes into consideration children cared for in pre-school age (0-3 year-olds). The cities of Zurich and Lausanne present the highest values,

whereas St. Gallen and Bern the lowest. In Basel and Zurich there has been a strong increase in infant care since 2014 (FSO 2016: 24). The availability of child care for infants indicator takes into consideration the places for children of pre-school age (0-3 year-olds). These childcare places help those with family commitments to reconcile them with their work requirements, leading to a higher well-being. However, according to the Urban Audit (*ibid.*: 25), the number of children who actually reside in the specific city rather than in neighbouring areas is not shown in the data. The table above (39) focuses on the total number of pre-school places. The cities of Basel and Zurich present the higher number, whereas Lucerne and St. Gallen have the lowest. As regards the number of subsidised places, Geneva presents the highest number whereas St. Gallen the lowest.

The length of people's commuting from home to work is important when talking of personal well-being, since commuting time is often considered as lost time because it cannot be used for leisure and family activities. Thus, it may lead to a higher level of stress and to an increase in transport costs. It may also lead to an increase in polluting levels and a worsening of health conditions. The cities of Zurich and Bern present the highest commuting times, and St. Gallen and Lugano have the lowest. It is important to remember that Switzerland also has a high number of trans-frontier commuters: often people move across borders during the weekend also due to the high living costs in Switzerland.

9. Infrastructure & services

Infrastructure and services constitute an important dimension of QoL, determining a location's level of attractiveness. The infrastructure and services index is spatially defined and can vary quite a lot in cities. Good infrastructure and services influence both subjective and objective aspects of QoL. For example, a positive residential and workplace infrastructure might be set in an attractive environment, and could include good accessibility and tax incentives. In addition, people's QoL can be positively affected by a range of services such as day nurseries (point 8), mobility networks (point 10) and cultural facilities (point 11). Yet, the infrastructure and services data is not displayed in the Urban Audit.

10. Mobility

Mobility is necessary for working and leisure activities, as a good transportation network is important to satisfy needs such as education and recreational activities. Indeed, the efficiency with which public transportation connects residential areas and employment premises is generally considered to be an integral part of good sustainable, urban mobility management, and it makes a considerable contribution to the citizens' QoL. The following mobility indicators are taken into consideration in this evaluation of the current local well-being in the eight Swiss municipalities:

- price of a monthly public transport ticket (for journeys of 5 to 10 km in town centre, in CHF)

- public transport stops, 2015 (number of stops per per km²)

- choice of transportation mode, 2015 (for commuters)

Table 40: Mobility (based on Urban Audit, FSO 2016: 28-30)

cities	price of a monthly public transport ticket (2015)	public transport stops per km²	choice of transportation mode (public transport)
Bern	6	7	2
Basel	2	2	3
Geneva	5	1	4
Lausanne	8	4	5
Lucerne	3	5	6
Lugano	7	8	8
St. Gallen	4	6	7
Zurich	1	3	1

The price of a monthly public transport ticket shows the costs that an individual has to pay for using public transportation. Looking at the table (40) it can be observed that the price of public transport tickets is higher in the cities of Zurich and Basel, whereas it is lower in the cities of Lugano and Lausanne. Apart from the cities of Geneva, Lugano and Lausanne, in the other five cities the price of monthly public transport tickets has gone up since 2012 (FSO 2016: 28).

The number of public transport stops per square kilometre is an indicator that shows the density of a transportation network. In fact, a well-developed public transportation network increases the freedom of choosing the means of transportation and influences the use of private motorised transportation as well as that of public transportation. The number of stops per km² is higher in the cities of Geneva and Basel and lower in the cities of Bern and Lugano.

As regards the choice of transportation mode, the Urban Audit (*ibid.*: 30) takes into consideration the public transport, the human-powered mobility (e.g. cycling, walking) and the motorised private transport (e.g. cars, motorcycles). The table above shows the use of public transport in the eight Swiss cities considered. The cities of Zurich and of Bern show the highest use of public transport, whereas St. Gallen and Lugano have the lowest. On the contrary, the cities of Lugano and St. Gallen show the highest use of private transport. The high usage of public transport is likely to be the consequence of an efficient public transportation system. Generally speaking, a reduction of private motorised transportation improves the quality of the environment and positively influences a personal sense of security.

11. Culture and leisure

Cultural and leisure activities (e.g. sports facilities, clubs) provide the opportunity for people to make and consolidate social contacts, to develop their social networks and to enjoy recreational activities. The following culture and leisure

indicators also provide interesting information in this overview of the current local well-being in the eight Swiss municipalities:

- cultural offering, 2015 (number of museums, theatres and cinemas per 100,000 inhabitants)

- cultural demand, 2015 (number of visitors per inhabitant)

- cinema seats by type of cinema, 2015 (number of cinema seats per 1000 inhabitants by type of cinema)

Table 41: Culture and leisure (based on Urban Audit, FSO 2016: 31-33)

cities	cultural offering (museums)	cultural demand (museums)	cinema seats by type of cinema (single screen)
Bern	2	4	1
Basel	1	2	5
Geneva	8	5	6
Lausanne	3	3	4
Lucerne	6	1	2
Lugano	4	8	3
St. Gallen	7	6	7
Zurich	5	7	8

The existence of museums, theatres and cinemas indicates a city's capacity to provide cultural leisure activities. The cultural offering index takes into consideration the number of museums, theatres and cinemas available per 100,000 inhabitants. The table above (table 41) displays the museum offering (thus not theatres and cinemas). Basel and Bern show the highest museum offering, whereas St. Gallen and Geneva the lowest. As regards the theatrical offering, Bern ranks highest whereas Lucerne and Geneva rank the lowest. As regards the cinema offering, the city of Bern ranks top whereas Lausanne ranks lowest (FSO 2016: 31).

The cultural demand index is based on the number of visitors per inhabitant. Special museum exhibitions and theatre performances are usually located in cities and attract visitors from beyond their administrative boundaries. As regards the museum visitors, the cities of Lucerne and Basel show the highest scores, whereas Zurich and Lugano the lowest. Yet, if the number of theatre visitors, which is not displayed in the table above, is taken into consideration, Zurich, Basel and St. Gallen show the highest scores, whereas Lugano, Lucerne and Geneva show the lowest (*ibid.*: 32).

As regards the cinema seats by type of cinema index, the Urban Audit looks at the different types of cinema: single screen, cinema complex (2-7 screens) and multiplex (> 7 screens). The table above focuses on the single screen modality. The cities of Bern and Lucerne rank top whereas the cities of St. Gallen and Zurich rank lowest. Yet, according to the Urban Audit (*ibid.*: 33), since the 1990s,

single screen cinemas have decreased at the expense of multiplex cinemas. These days multiplex cinema are often part of larger commercial centres where there are also shops and restaurants, so that various leisure activities can be combined in a single space. As regards multiplex cinemas, Bern still ranks top whereas Lucerne, Lugano, Geneva and St. Gallen have a low number of these cinemas.

As pointed out above, well-being indicators such as these that take into account territorial characteristics can help to guide the prioritisation and effectiveness of policy-making, and become a reliable tool to monitor change over time. Yet, as the OECD (2014: 16) recommends, these well-being measurements should be clearly linked to policy objectives at the various government levels. These policies should also be cross-sectoral and involve many different stakeholders (policy makers, private sector, citizens) and improve effective multi-level governance mechanisms.

5.2 The overall performance of the spatial governance and planning system

Despite the more complex and in some respects controversial picture derived from well-being indicators, according to Zetter (2008: 47):

> *Switzerland has a high level of economic performance; a high quality of both built and natural environments; and a high degree of social harmony, when judged from an internationally comparative perspective. It can be assumed that among the many factors making a positive contribution to these high standards, although this has never been comprehensively evaluated, is the planning system. Evidence for this is that planning does not attract a wide degree of political and public hostility, which it would if planning was seen to be making a negative contribution to economic prosperity, environmental quality and social stability. However, even somewhat limited evidence of a good past performance is no guarantee for the future, in a situation in which the economic, environmental and social contexts are continuing to alter and the nature of planning is being transformed. Against this background, the Swiss planning system is beginning to look a little long in the tooth and in need of adaptation to changing circumstances.*

In other words, Zetter affirms (by assumption) the link between Switzerland's high level of economic, environmental and social performance (therefore closely connected to economic, environmental and social well-being) and the country's spatial planning system. In particular, he includes as evidence the absence of negative criticism and hostility from the public and political spheres, but points out that the positive contribution of spatial planning has never been comprehensively evaluated. He further notes that the country should not be content to rest on its past and present successes, but needs to continually adapt to

a constantly changing world. Following up on Zetter's observations, this section of the chapter approaches the issue trying to assess, first, the overall performance of the Swiss system of spatial governance and planning. On this basis, the next sections will then focus more closely on possible relations between spatial governance and planning and well-being.

5.2.1 Applying the five OECD evaluation criteria

In principle, as already mentioned in chapter one (section 1.1), it needs to be remembered that "evaluating planning systems is something different (albeit not completely detached) from evaluating plans" (Janin Rivolin 2008: 169-171), since plans are only one component of the whole system's operation. In a complex development context, "evaluation refers to the process of determining the worth or significance of a development intervention" (OECD 2010: 6). Yet, Carmona & Sieh (2008: 428) explain that "the performance of most public services is extremely complex to measure, and as a result, performance measurement is often limited to those aspects that can easily and expediently be measured". On the other hand, as Janin Rivolin (2012: 78, see also 2017) notes, evaluating the performance of spatial planning systems has become necessary, in a globalised world, to improve the awareness of planners and decision-makers in the understanding of major trends and in the orientation of policies and behaviours concerning spatial transformation and governance. Moreover, it can help the acknowledgement and endorsement of spatial planning as a mature field of theories, policies and practices (6.3.3).

In this light, the OECD quality standards for development evaluation (3.3.1), which various national and international institutions already use for policy assessment, can be a useful instrument to face this task (Janin Rivolin 2012: 78-79). The five evaluation criteria, as set out by the Network on Development Evaluation of the Development Assistance Committee of the OECD (2010), are: relevance, efficiency, effectiveness, impact and sustainability (1.1, 3.5.2). These five evaluation criteria have been promoted by the OECD for over twenty years in order to improve the effectiveness of international development policies by supporting evaluation which is informed, independent and robust (see OECD 1991, 2010). Recently, also the proposal for the ESPON COMPASS project (2016-2018) has highlighted the potential usefulness of adopting these OECD criteria for the evaluation of the performance of policy in the assessment of spatial governance and planning systems.

According to Janin Rivolin (2012: 79) the 'relevance' of a planning system is the extent to which its structure (see applied model in 3.2, figure 2 and table 1) is consistent within an institutional context, in particular with the requirements posed by the government system towards the functioning of the land use system. In order to evaluate a planning system's relevance, the focus is therefore on the

status of the structure (S) and on its incoming and outgoing relations, as they are illustrated in the respective row and column of figure 16 below.

The 'efficiency' of a planning system is a measure of how economically the established tools are capable of converting resources/inputs (e.g. funds, expertise, time) into results/outcomes (*ibid.*: 79, see 2.1.3). In order to evaluate a planning system's efficiency, the focus moves to the row and column that crosses the status of tools (T) in figure 16.

The 'effectiveness' of a planning system is the extent to which some basic objectives (i.e. the improvement of physical environment, plus others declared) are achieved by practices, taking into account their relative importance (*ivi*). In order to evaluate a planning system's effectiveness, careful attention must be paid to the status of practices (P) and to their respective incoming and outgoing relations (see figure 16 below). Moreover, in an institutional technology, planning cultures and systems depend ultimately on the social assessment of the effectiveness of planning (*ibid.*: 81).

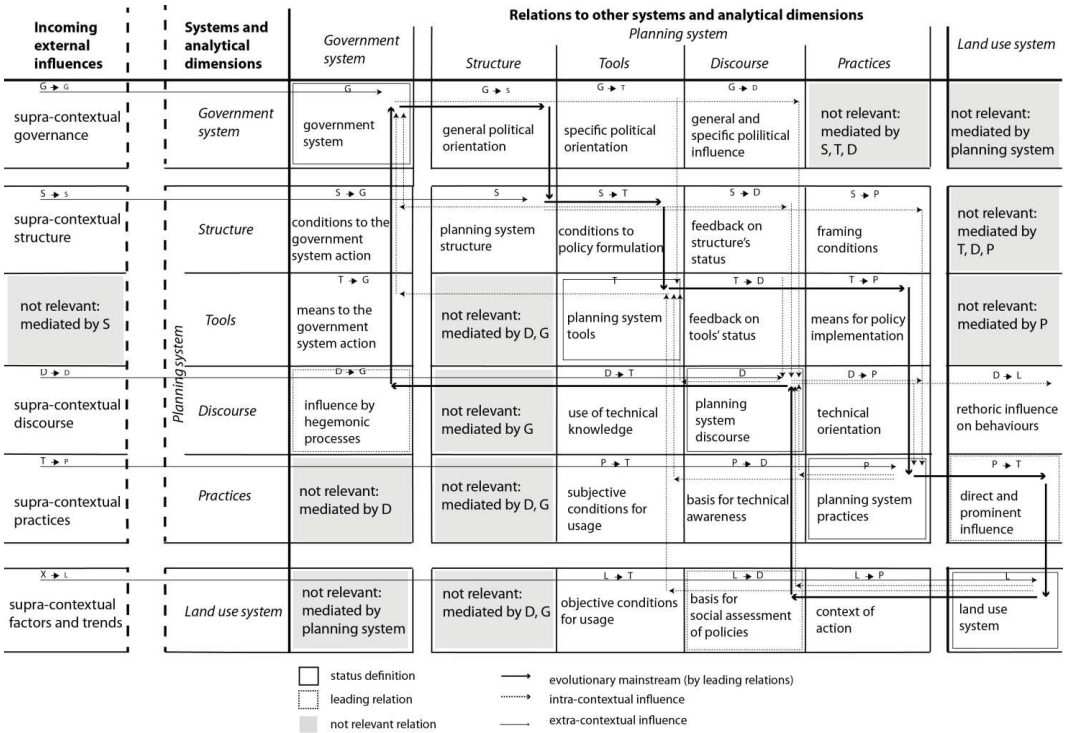


Figure 16: Relevant dimensions and relationships in planning system operation (Janin Rivolin 2012: 74)

The 'impact' of a planning system can be seen in the long-term effects, both positive and negative, both primary and secondary, produced in the land use system, whether directly or indirectly, whether intended or unintended (*ibid.*: 79). In order to evaluate the impact of a planning system, concentration should be

focused on the status of the land use system (L), as well as on the row and column converging in that cell.

The 'sustainability' of a planning system is the continuation of benefits from its intervention through discourse after the completion of its main operation, including the likelihood and potential for long-term benefits and the resilience over time of the net benefit flows to risk (*ibid.*: 79-80). In order to evaluate the sustainability of a planning system, attention should paid to the status of discourse (D) and to the various relations converging here by row and column.

5.2.2 Evaluating the performance of the Swiss planning system

Following the above theoretical proposal (in fact, already tested in practice on the Italian system, Janin Rivolin 2012: 73-77), the evaluation of the Swiss planning system can be done by analysing the dimensions and relationships in figure 17.

As already mentioned above (5.2.1), in order to focus on the 'relevance' of the planning system attention should be on the status of the structure and on its incoming and outgoing relations. As far as Switzerland is concerned, the country is a federal state with decentralised powers and decision-making, which makes use of direct democracy and referendums (2.3.3, 4.2.2.2 and 5.3.1.5). Yet, despite the strong national cohesion, the institutional and territorial apparatus are often perceived as fragmented due to historical and geographical reasons. In fact, territorial fragmentation and strong internal dichotomies are at the core of the structure of the Swiss Confederation as seen in 4.2, and, to some extent, there seems to be a certain mismatch between the administrative and political organisation and the socio-economic reality.

According to the OECD (2002: 95), a large part of spatial planning policy in Switzerland, implicitly or explicitly, is centred on the notion of the external costs of land use. Therefore, given the country's small size and relatively high population density, its planning policy places considerable emphasis on using the limited amount of land available efficiently and on reducing the external costs. The OECD (*ibid.*: 96) also suggests that "much of Swiss spatial planning policy is thus a search for the right balance between the needs of regions to use land for individual economic development and the requirements to keep space open as a public good for wider society, and to minimise the external costs of land use".

As regards the 'efficiency' of the Swiss planning system, spatial planning methods and issues have strongly changed during the years. Indeed, in recent decades Switzerland has undergone a number of transformations and today there are a mix of old and new policy instruments (4.3). In fact, even though prescriptive zoning and legally binding plans exist, the country is currently designating new planning policy lines of action. Thus, the planning process is moving towards a more strategic management of the territory, providing more freedom to the local administration and to private/corporate partners (4.6.3).

Moreover, administrative reforms generally require more output-oriented procedures (Gerber 2016: 201) and new standards for the presentation of financial statements have been introduced in most municipalities, highlighting the dilemma of moving towards a new generation of property driven land use policies (4.6.3).

In relation to the 'effectiveness' of the Swiss planning system, even though the rigid regulation system and the ordinary practices of conformative nature prevail, the system is adopting increasing flexible instruments. The increasing flexibility in the use of planning instruments has not, however, been at the expense of land use plans, since flexible instruments do not replace land use plans, but rather complement them (Gerber 2016: 203). Indeed, moving towards strategic planning, spatial planning aims to achieve larger problem-solving strategies. Currently, the country is promoting legislation, policies and practices that aim to improve the physical and natural environment. This can be seen in the 2014 revised Federal Law on Spatial Planning (as a consequence of the 2013 referendum, see 4.4.1), as a result of which the cantons and the communes are applying stricter regulations in order to reduce building areas, which were measured too generously before (4.3.2, 4.3.3). Chapter four (4.4.2, 4.4.3 and 4.4.4), provides some examples of the country's ability and effectiveness in transposing social needs into planning policies and practices.

As regards the 'impact' of the Swiss planning system on the land system, there seems to be a need for a more rational land use, the limiting of disordered urban sprawl and the setting up of urban-rural networks with nearby small and medium-sized towns (4.3 and 5.1.2). Indeed, as the international group of experts invited by the ARE in 2008 found, although spatial planning in Switzerland is good, it is still in need of improvement (1.3). It is "good but not good enough" as the experts stated in the media conference held for the publication of their report (Scholl 2008: 6). In general, Swiss spatial planning is well positioned in international comparisons and presents the necessary prerequisites to achieve a good sustainable development. However, for the experts, as observed, it still does not meet the high requirements of sustainable development. For example, Van Den Berg (2008: 50) observes that "the Swiss physical (spatial) environment is in good condition, however, with considerable sprawl and inefficient use of land".

Concerning the 'sustainability' of the Swiss planning system, the citizens' preferences are taken into account in policy-making through the direct democracy process (4.4.1). The concept of spatial planning has expanded in recent years, integrating the concept of sustainability, strengthening participative methods, increasing the use of public-private partnerships and negotiation-oriented planning, and strengthening the application of decision support tools. Indeed, the Swiss planning system tries to contribute to assess sustainability together with other factors, such as relying on trusted experts, like the team working at the ARE, as well as on the country's strong capacity to accumulate knowledge, and the strong commitment by the country's universities and research centres towards

urban and regional studies as well as to improving the country's economic, environmental and social well-being (4.4.2).

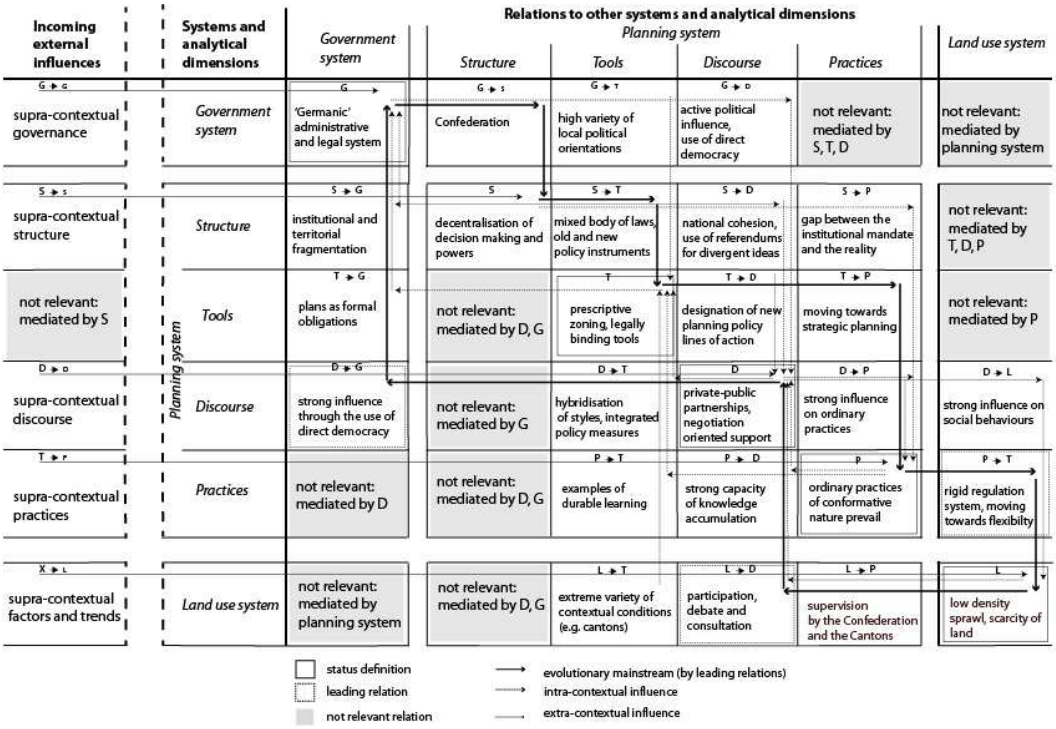


Figure 17: Relevant dimensions and relationships in the Swiss planning system operation (author's own)

Overall, applying the OECD evaluation criteria to the Swiss planning system, it seems that there has been a positive contribution of the spatial planning system, when viewed through the lenses of economic prosperity, environmental quality and social stability.

For example, as regards the contribution of the Swiss governance and planning system to the country's economic prosperity, the system is promoting more efficient policy-making, implementation and feedback. This can be seen in the country's administrative reforms which tend to call for more output-oriented procedures (Gerber 2016: 201, see efficiency above) and the country's interest in efficient land use in order to minimise external costs. This also reflects the country's increased use of private law instruments and managerial practices together with a greater involvement of public actors in spatial development, as discussed in chapter four (4.6.3). Thus, this adoption of more flexible modalities of delivering land use transformation rights by the Swiss system of governance and planning would seem to highlight the importance of a territorial governance that can mediate between 'embeddedness' (2.2.4) and innovation in the pursuit of enhancing the higher well-being of the whole community.

As regards environmental quality, the Swiss system of spatial governance and planning is promoting a more rational land use, establishing urban-rural networks with neighbouring small and medium-sized towns and limiting disordered urban sprawl (4.3 and 5.1.2, see impact above). Switzerland's monitoring of environmental quality is indeed improving, as can also be observed in the country's use of the MONET indicators (3.4.2.1). Thus, the country is promoting legislation, policies and practices that aim to improve the physical and natural environment (see effectiveness above).

As regards the country's willingness to improve social stability, the use of direct democracy and referendums (2.3.3, see sustainability above) in governance and planning procedures is important in order to deal with the country's geographical and institutional fragmentation (see relevance above).

Thus, this analysis and application of the five OECD criteria would also seem to confirm the collocation of the Swiss governance and planning system within the neo-performative model, discussed in chapter four (4.6.2).

Before analysing the interface between good spatial governance and planning and sustainable well-being (see figure 18, 5.3.2), it is useful to have an overview of the current level of the quality of governance at an international level. In the TANGO project, indicators from the World Bank's Worldwide Governance Indicators database <www.govindicators.org> have been used to examine the quality of governance of the countries in the ESPON space and to identify clusters based on these data. Switzerland has also been taken into consideration in the study and has been positioned within cluster I of the Rhinelandic states, which means that the quality of governance in Switzerland is high. The World Bank identified for three time periods (2006-2011-2016) six indicators: voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, and control of corruption. Switzerland reveals high scores in all of the six indicators. In particular, as regards the voice and accountability indicator, Switzerland scores 97/100 (2016). The trend is almost constant: in 2006 the score was 98 and in 2011 it was 98. As regards the political stability and absence of violence indicator, Switzerland scores 95/100 (2016). The trend is constant: in 2006 the score was 95 and in 2011 it was 94. As regards the government effectiveness indicator, Switzerland scores 99/100 (2016). The trend is again almost constant but slightly oscillating: in 2006 the score was 98 and in 2011 it was 97. As regards the regulatory quality indicator, Switzerland scores 98/100 (2016). The trend is increasing: in 2006 the score was 92 and in 2011 it was 94. As regards the rule of law indicator, Switzerland scores 98/100 (2016). The trend is swinging: in 2006 the score was 97 and in 2011 it was 93. As regards the control of corruption indicator, Switzerland scores 96/100 (2016). The trend is constant: in 2006 the score was 96 and in 2011 it was 95. Overall, it would seem that Switzerland has a high level of quality of governance which has been improving slightly in the most recent years.

5.3 Surveying the interactions between spatial planning and well-being

After assessing the overall performance of the Swiss system of spatial governance and planning, this section of the chapter focuses on the interface between spatial planning in Switzerland and the current status of well-being of the country. More in general, the aim is also to identify a set of coherent and integrated indicators for spatial planning outcomes and to develop an analytical framework for the interpretation of the indicators. The analysis takes into account the information on Swiss spatial governance and planning presented in chapter four, examining it through the lens of the existing research and the relevant data available on the assessment of the country's spatial planning outcomes. First, Gleeson's six methodological pointers are used to measure the contribution of Swiss spatial planning (5.3.1, with each pointer discussed in a separate subsection, 5.3.1.1 to 5.3.1.6). Then, the interface between Swiss spatial governance and planning and sustainable well-being is examined in terms of the five ESPON TANGO dimensions (5.3.2), and the interactions investigated (5.3.3), also referring to the illustrative case study from the Ticino Canton.

5.3.1 Applying Gleeson's six methodological pointers

As discussed in chapter two, spatial planning shapes the urban and living environment. Moreover, as seen in 5.1 above, spatial planning policies and interventions are influenced by specific factors. Thus, for example, contextual indicators (such as those discussed in 5.1.1, 5.1.2 and 5.1.3), indicate the various economic, environmental and social circumstances that planning policies have to interact with at the different policy levels.

According to the 2008 Royal Town Planning Institute Report (RTPI) on Measuring the Outcomes of Spatial Planning in England, the "measurement of the effectiveness and outcomes of spatial planning has long been seen as a challenging task due to the complexity involved in spatial planning activities and the limitation of any single method as a means of effectively measuring the outcome and impact of these activities" (RTPI 2008: 1, see also 2.1.3 and 3.5.1). The importance of the process in relation to planning outcomes has also been emphasised in research by Carmona & Sieh (2004, 2008) and Gurran et al. (2012).

For the RTPI (2008: 10) the "process efficiency and effectiveness is seen as being central to the delivery of the visions of sustainable development and greater liveability, which means that the ability of plans to be flexible and adaptable to contribute to the achievement of these wider outcomes has to be assessed". Yet, perceptions of good planning and what makes a sustainable environment will vary from one individual or set of stakeholders to another (Carmona & Sieh 2004: 50). Moreover, also according to Carmona & Sieh (*ibid.*: 324), "the sustainable agenda is broad and constantly changing, and increasingly encompasses factors well

beyond the traditional land-use/spatial planning canon, or more particularly, beyond planning acting in isolation".

In any case, in order to achieve this endeavour, as explained in chapter three (3.5.2), Gleeson (2002: 5-6) observes that the economic, environmental, social and governance imperatives that make up the contemporary planning context need to be taken into account and suggests the development of a matrix of outcomes that may be used to frame the measurement process. Moreover, as Carmona & Sieh (2004: 189) point out, "although Gleeson falls short of suggesting an approach to actually measure the contribution of planning in these areas, he identifies a number of 'methodological pointers' to that end".

Gleeson's research has focused on measuring planning's value within the Australian context; this section analyses Gleeson's six contributions of planning (economic contribution, environmental contribution, social contribution, cultural contribution, democratic contribution, governance contribution) and applies them to the Swiss context. Overall, observing spatial planning development processes in Switzerland through the lens of Gleeson's methodological pointers, a positive contribution of spatial planning in all of the six dimensions would seem to emerge, as can be seen in the table below (table 42). The contribution of each of the pointers to spatial planning in Switzerland is then discussed in the following subsections.

Table 42: Swiss spatial planning outcomes according to Gleeson's methodological pointers (author's own)

Pointer	**Spatial planning outcomes**
Economic contribution	- emergence of innovative public management concepts (e.g. NPM) - analysis and monitoring of public sector activities in the cantons (e.g. indicators) - 'territorialisation' of public policy (e.g. New Regional Policy) - enhancing innovation and competition - cross-border cooperation (e.g. INTERREG, URBACT)
Environmental contribution	- environmental and landscape protection - urban sprawl containment policies - more rational land use (e.g. revisions of the Federal Law on Spatial Planning, application of the Emerald Network) - establishing urban-rural networks - production of sustainability indicators (e.g. MONET)
Social contribution	- reduction of social inequalities - fostering inclusiveness - ensuring that planning decisions are made in the wider public interest, involving all the stakeholders - participatory processes - resolution of conflicting interests

Cultural contribution	- strong territorial fragmentation - significant differences in cultural values and behaviours in the different cantons - strong decentralised federalism - diversity of policies and cultures; building and planning laws differ greatly
Democratic contribution	- direct democracy - considerable participation by citizens in planning procedures - formal and informal ways of participation - high percentage of foreign inhabitants who might not be able to vote in referendums or might be less involved - e-democracy and e-voting tools
Governance contribution	- more flexibility and a strategic management of the territory - sustainability policies - increased vertical and horizontal coordination

5.3.1.1 Economic contribution: how does planning increase efficiency and innovation?

As seen in the previous chapter (4.6.3), in the twentieth century innovative public management concepts have emerged in Switzerland, such as the New Public Management reforms (Gerber 2016), triggering discussion and debate on whether a better management and control of the quality and efficiency of spatial planning within the cantons is possible, and attempts have been made to set up indicators to analyse and monitor various public sector activities in the cantons (e.g. Lucerne and Grisons, see also 3.4.1).

Pinson (2008: 43) points out that spatial planning is more efficient when space is taken into account at an early stage of the policy decision processes and that a spatial approach to sector policies may enhance the effectiveness of such policies. For her, “space in itself is an active agent of public interventions, because of the specificity of its natural, cultural, economic resources, which can be an added value to a policy” (*ivi*). She also observes that this ‘territorialisation’ of public policy can be found in Switzerland within the New Regional Policy (NRP, see also 2.3.4), at the various federal levels. In fact, with the NRP both the federal government and the cantons provide support to help border, rural and mountain regions, together with rural areas, to deal with changes in economic structures. Indeed, there has been a major transfomation of Switzerland’s regional policy in recent years with the aim of making the economy innovative and competitive. This includes improving the hard (e.g. infrastructures) and soft (human capital, knowledge transfer) regional location aspects (2.2.4), alongside the promotion of competitiveness, innovation and the creation of value which is sustainable. In order to achieve this, the NRP contributes towards the creation and maintenance of jobs in those areas which are targeted; so indirectly it assists in reducing regional disparities and maintaining the decentralised settlement

structures in Switzerland. Thus, the NRP concentrates on the provision of financial assistance for programmes, projects and initiatives which actively contribute to the promotion of innovation, value creation and competitiveness in the various different regions. The OECD (2011: 111) suggests that the NRP has "placed an important accent on promoting innovation as a driver of regional development".

As highlighted by the OECD (*ibid.*: 95-96), the main issue for the NRP (Muggli 2004: 4) is that:

> *[w]hen fulfilling the tasks conferred on it, the Confederation is also bound by the aims and principles of spatial planning. Therefore, at all levels of action – planning, legislation, administration, case-law – it remains subject to spatial planning law itself. Being tied to the 'demands' of spatial planning also means that the Confederation is bound by cantonal law and the planning studies based on it unless exempted by special provisions.*

Therefore, the NRP cantonal implementation programmes have to be in line with the canton's ten-year spatial development plan (4.3.2).

Since 1 January 2008, the Swiss Confederation has also been promoting cooperation between the cantons and INTERREG within the framework of the NRP. For the participation in the new programming period (2014-2020), the Confederation has made CHF 50-60 million available from the Regional Development Fund. Thus, European territorial cooperation is promoted by the NRP in line with the ESPON, INTERREG, INTERACT and URBACT programmes. The cantons and the federal government pay for the financial assistance provided within the NRP framework in equal parts. The percentage of public funds in the total project volume has no limit. For projects to be eligible for funding, they must have an impact on border, rural or mountain regions. Those projects which are in line with the European Territorial Cooperation (ETC) are not subject to this rule and may be launched throughout Switzerland. The country's relations with the EU are further discussed in 6.2.4.

The use of indicators to evaluate planning may also lead to an increase in efficiency and innovation. According to the OECD (2011: 100-101), under the Swiss Constitution all policies have to be evaluated with respect to effectiveness. In any case, although there are various examples of the association of indicator systems with sanctions or rewards, the evidence is mixed regarding their effectiveness (*ibid.*: 103-104). However, the "various levels of government may be motivated to collaborate if they perceive it will lead to new or better information for enhancing service delivery, improve policy effectiveness, or if they can share the additional resources which result from efficiency gains" (OECD 2009: 38). Indeed, for the OECD (2011: 17) the information produced from the first round of monitoring of the impact of the NRP (2008-2011) could "be used to refine the monitoring system and establish a set of indicators with clear definitions linked to annual reports".

5.3.1.2 Environmental contribution: how does planning improve environments?

Moving towards a sustainable use of land is one of the major challenges Switzerland is facing. Thus, great importance is given to environmental and landscape protection. In this respect, the country would seem to be well-positioned, since it is considered to be one of the most pollution free countries in the world. However, as seen in 5.1.2, there are a certain number of problems regarding air quality. Moreover, there still seems to be a need for a more rational land use in Switzerland; for example, restricting disordered urban sprawl and setting up urban-rural networks between neighbouring small and medium-sized towns.

Changes in the national agenda can be seen in the bottom-up initiative which led to the 2013 referendum and to the 2014 partial revisions of the Federal Law on Spatial Planning (4.4.1), tightening the Law on land use in order to limit building land. In 2016, legislation restricting the building of second homes was approved. An environmental impact assessment (EIA, see 2.2.2) serves to verify whether environmental regulations are respected by a construction project. In Switzerland, since this EIA manual is set out as a federal directive, it is authoritative in a number of specific cases: 1) if a federal authority has to licence the planned installation; 2) if the EIA regards an installation which is subject to a hearing by the FOEN; or 3) if the installation is located in a canton which has not issued a directive of its own. Nevertheless, the recent OECD Environmental Performance Review of Switzerland (OECD 2017b: 27) recommends that Switzerland introduces requirements for strategic environmental assessment (SEA) of plans and programmes.

According to the ARE, the Federal Council requires a periodic production of sustainability indicators in order to check and implement the constitutional sustainable development mandate, as well as to monitor the overall status of development in the country. For example, in order to reach these sustainable development goals, the MONET system of national indicators has been set up, as seen in chapter three (3.4.2.1), offering an appropriate set of metrics and providing an in-depth and updated analysis of the current state of development. However, because of the country's federal structure, the situation still needs improvement. The OECD (2017b: 80), for example, recommends that cantonal environmental performance indicators should be developed, commenting that if they were then used for regular reporting to the Confederation, it would make an important contribution to a "more consistent nationwide implementation of environmental law".

A further aspect on planning and environment in Switzerland is linked to its relations with the European Union and its Cohesion Policy, as seen in 2.3.7 and which will be looked at in chapter six (6.2.4). For, although the country is not a member of the EU and therefore outside direct implementation of EU Cohesion

Policy (which has had responsibilities for safeguarding the environment since the Treaty of Amsterdam in 1997), it nevertheless makes an independent contribution to EU Cohesion Policy. Thus, for example, since 18 November 2016, Switzerland, together with Belarus and Ukraine, has officially adopted the Emerald Network (4.4.2), the equivalent of Natura 2000 in non European countries, which is based on the Bern Convention and aims to better integrate the European network of protected areas. However, unlike the EU directives, it is not legally binding. Moreover, in Switzerland there is an equivalent legislation of the EU Seveso Directive (I, II and III), which improves the safety of sites containing large quantities of dangerous substances, even though the federal structure of the State and the competences of the cantons in this field permit some differences.

5.3.1.3 Social contribution: how does planning improve social environments?

Spatial planning should provide the opportunity for communities to reduce social inequalities, improve inclusiveness and the social environment. Indeed, as seen in chapter two (2.1.7), the concept of social equity goes to the heart of spatial planning's task: to reconcile often conflicting interests and to ensure that decisions − for example as regards the allocation of economic, environmental and social resources − are made in the wider public interest, involving all the stakeholders. An example of this in Switzerland can be seen in the planning and implementation of the *Foce del Cassarate e Parco Ciani* (Mouth of the Cassarate River and the Ciani Park) project in the Ticino Canton, which is described in more depth later in this chapter (5.3.3.1).

Generally speaking, Swiss planning would seem to take the task of improving the social environment as one of its main objectives. However, there are some issues relating to the inclusion and exclusion of certain parts of the population, for example, voting restrictions relating to residents who are not citizens (2.3.3); one aspect of this is linked to community participation, which is looked at in the answer to question 5 below (5.3.1.5).

5.3.1.4 Cultural contribution: how does planning strengthen cultural qualities?

As seen in chapter four (4.2), in Switzerland there is a strong territorial fragmentation which has led to significant differences in cultural values and behaviours in the different cantons. Despite this, for Scholl (2008: 10), "Switzerland is well known as, and in comparison to other European countries is, one of the most open societies. The sovereign handling of different national languages, the integration of different cultures and the traditional cooperation across its borders are a visible expression of this. A high quality of life and high environmental quality have been cultural values for a long time and can be experienced in everyday life". Nevertheless, due to the strong decentralised federalism, there can be considerable differences between the objectives, opinions

and culture of the various municipalities and cantons, which act relatively independently (Van Den Berg 2008: 50, see 4.2.4). Moreover, as a result of the diversity of the culture and policies, spatial planning is somewhat fragmented (Scholl 2008: 80) and building and planning laws can differ greatly. Because of this, the Confederation has an important role in coordinating and monitoring the planning at the cantonal and local level and, through the use of direct democracy, evaluates the citizens' preferences, taking heed of their choices by incorporating them into policy-making.

5.3.1.5 Democratic contribution: how does planning enhance participation?

Switzerland has a strong tradition of direct participation at all government levels and envisages considerable participation by citizens in planning procedures (2.3.3). As seen in chapter four (4.2.2.2), article 4 of the 1979 Swiss Federal Law on Spatial Planning is the legal basis that ensures 'adequate participation' of the population in the planning process and states that federal, cantonal and local authorities have to provide opportunities for public involvement when adopting planning strategies. Moreover, planning laws not only include formal regulations for public involvement but also encourage informal ways of collaboration. However, in some cases the quality of the processes has to be improved (e.g. rural landscape development) and the tools enhanced (Schroth 2010: 29).

According to the OECD (2009), there are numerous challenges in establishing effective indicator systems. Yet, participatory mechanisms are a powerful instrument for attenuating a large number of the challenges linked to the performance indicator systems, since they can "balance top-down and bottom-up influences and can enhance the usefulness of an indicator system from the perspective of the various stakeholders party to the arrangement" (*ibid.*: 68).

Sieverts (2008: 46) observes that Switzerland uses direct, immediate democracy for all its major decisions and notes that "because in spatial planning, the issue is almost always about clear-cut and well-defined factual decisions, demagogic arguments are rare". He adds, that "without being able to prove it", he has gained "the impression that this process of decision-making does not, in general, when compared with Germany, for example, create any additional delays and can be implemented in a realistic way" (*ibid.*: 47, see also 2.1.6). Yet, Van Den Berg (2008: 50) argues that direct democracy does not always lead to good results. Indeed, as noted in chapter two (2.3.3), in Switzerland a high percentage of foreign inhabitants might not be able to vote in referendums or might be less involved. The facilitation of voting through e-democracy (2.1.6) is another important issue.

Since in today's information society the creation and manipulation of information is profoundly changing social, economic and cultural conditions, e-democracy proposes a new smart form of government in which all citizens are equally free and eligible to participate in the proposal and creation of laws.

However, e-democracy cannot be merely reduced to the concept of e-voting (Chappelet & Kilchenmann 2005), since democracy strongly promotes discussions about political issues. An interesting example can be seen in a discussion of Swiss pilot programmes related to the possible introduction of e-democracy tools, which have been criticised since they may create online segregation (Swiss Embassy in Canada 2011). The concern among Swiss policy makers is that online forums whose members have to deal with similar policy challenges or speak the same language (Switzerland has four official language groupings) are likely to group together. In such situations, a regional or linguistic dialogue, rather than a national one, could well take place, which might even lead to a decrease in national dialogue among the public.

5.3.1.6 Governance contribution: how does planning enhance the coordination and the effectiveness of institutions?

Major changes have taken place in spatial planning in recent years and the Swiss planning process is moving towards more flexibility and a strategic management of the territory, integrating the concept of sustainability, as seen in 5.2.2. Nevertheless, the coordination should be effective at both the vertical and the horizontal levels. In Switzerland, for vertical coordination, the 'tripartite agglomeration conference', and for horizontal coordination, the work of the ROK (*Raumordnungskonferenz*), are interesting in this regard (see 5.3.3.1). An example of the coordination and the effectiveness of Swiss institutions in planning practice can be seen in the *Foce del Cassarate e Parco Ciani* (Mouth of the Cassarate River and the Ciani Park) project in the Ticino Canton, mentioned in question 3 above, and described and discussed below (5.3.3.1).

5.3.2 Applying the five ESPON TANGO dimensions

After Gleeson's methodological pointers (5.3.1), an instrument that allows a deeper assessment of the possible relationships between spatial planning and well-being is derived from some recent ESPON research. In particular, the ESPON TANGO (Territorial Approaches to New Governance) 2011-2014 project pinpoints five dimensions and twenty components of 'good territorial governance' (ESPON & Nordregio 2013). More precisely, territorial governance is described as the formulation and implementation of public policies, programmes and projects for the development (which is seen as the improvement in the efficiency, equality and environmental quality of a place/territory, and in line with the Europe 2020 strategy) of a place/territory by:

1) 'coordinating actions of actors and institutions' (how coordination of actions is managed and how competencies are distributed at various territorial levels). Within this dimension, four components have been delineated by the TANGO project: distributing power across levels; distinguishing modes of leadership;

structures of coordination; and dealing with constraints to coordination (*ibid.*: 29-30).

2) 'integrating policy sectors' (how linkages are made among different policy sectors, such as land use and transport, and how potential synergies are developed among public, private and civil society sectors). Within this dimension, four components have been identified by the TANGO project: structural context for sectoral integration; achieving synergies across sectors; acknowledging sectoral conflicts; and dealing with sectoral conflicts (*ibid.*: 31-32).

3) 'mobilising stakeholder participation' (how stakeholders are given insight into the design of territorial governance processes and/or opportunity for shaping them). Within this dimension, four components have been chosen by the TANGO project: identification of stakeholders; securing of democratic legitimacy and accountability; integration of interests/viewpoint; and insights into territorial governance processes (*ibid.*: 32-34).

4) 'being adaptive to changing contexts' (how the responsiveness of territorial governance to changing contexts is implemented by various learning and feedback mechanisms). Within this dimension, four components have been delineated by the Tango project: institutional learning; individual learning and reflection; evidence of forward-looking actions; and scope of flexibility and experimentation (*ibid.*: 34-35).

5) 'realising place-based/territorial specificities and impacts' (place/territory is a social construct and is not necessarily limited by jurisdictional boundaries, thus this dimension considers the various overlapping notions of place/territory and the management of knowledge about place-related/territorial characteristics and impacts). Within this dimension, four components have been identified by the Tango project: criteria/logic of defining intervention area; coping with hard and soft/functional spaces; utilisation of territorial (expert) knowledge; and integration of territorial analysis (*ibid.*: 35-36).

The following diagram (figure 18) puts into perspective the interface between the Tango project's five dimensions of good territorial governance (referred to as 'good spatial governance and planning', the more complete term preferred and used throughout this study, see 2.1.2) and well-being indicators (5.1).

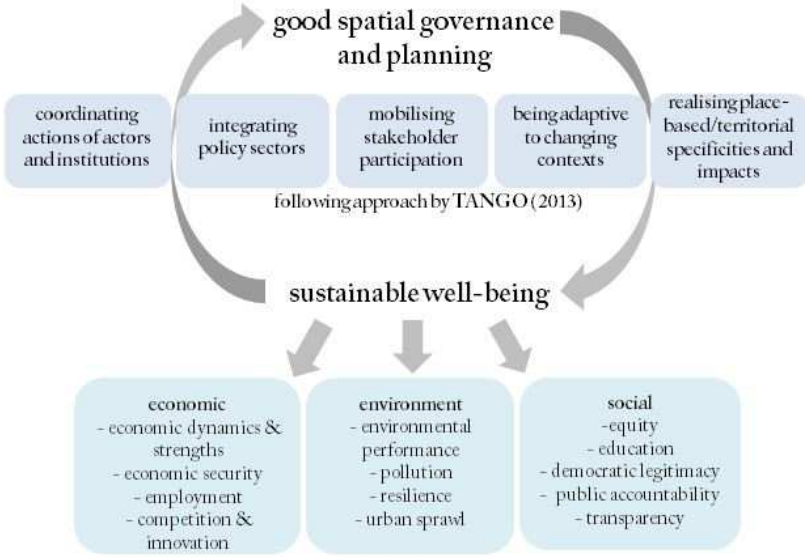


Figure 18: The interface between good spatial governance and planning, and sustainable well-being (author's own, partly based on the TANGO project's analytical dimensions)

1) As regards 'economic well-being', four components have been selected by the author on the basis of the analysis in 5.1.1:

- economic dynamics and strengths*:* the overall output of goods and services at a market price, usually annually (see GDP below);

- economic security: labour market participation (net activity rate);

- reducing the number of the unemployed: unemployment rate;

- competition and innovation: the level of research and development, recognizing the key role of innovation as a strong driver of economic growth and prosperity (see GII below).

Possible indicators for assessing economic well-being are: the Gross Domestic Product (GDP, 3.3.2, 5.1.1), the net activity rate (15-64 years), the unemployment rate, the Global Innovation Index (GII, 3.3.3, 5.1.1), the MONET indicators (3.4.2.1), and also data available at the Federal Statistical Office <www.bfs.admin.ch>.

As far as growth is concerned, in this study the general terms 'smart growth', 'sustainable growth' and 'inclusive growth' are used in the light of the European 2020 priorities and headline targets (Böhme et al. 2011), although their use has given rise to certain amount of criticism in the sustainable development debate (see e.g. Palumbo 2013). Moreover, as noted in the sustainability discourse, it also needs to be remembered that the pursuit of economic growth and a high GDP

should not be at the expense of sustainability and should keep the well-being of future generations in mind (2.1.7).

2) As regards 'environmental well-being', four components have been chosen by the author on the basis of the analysis in 5.1.2:

- environmental performance: health impacts, air quality, water and sanitation, water resources, agriculture, forests, fisheries, biodiversity and habitat, climate and energy;

- pollution: a contaminated environment with pollutants affects the mental and physical well-being of the population;

- resilience*:* ability to adapt to change, including absorbing and recovering quickly from the impact, for example, of possible natural disasters, while maintaining the original strength;

- urban sprawl: this phenomenon often worsens environmental, social and economic issues.

Possible indicators for assessing environmental well-being are: the Environmental Performance Index (EPI, 3.3.4, 5.1.2); the MONET indicators (3.4.2.1), and also data available at the Federal Statistical Office <www.bfs.admin.ch>.

3) As regards 'social well-being', five components have been identified and selected by the author on the basis of the analysis in 5.1.3:

- equity: to reconcile often conflicting interests and to ensure that decisions are made in the wider public interest;

- education: to increase civil awareness and social and political engagement and participation;

- democratic legitimacy: to ensure that, in place-based and territorial governance processes, relevant interests are given voice and represented through participative democracy;

- public accountability*:* to ensure that those holding responsibility are accountable to the public for place-based decision-making that affects their QoL;

- transparency: to ensure that the territorial governance procedures are visible and open to the public.

Democratic legitimacy and public accountability (which overlaps with transparency) components are central to dimension 3 above (mobilising stakeholder participation).

Possible indicators for assessing social well-being are: the Gini index (3.3.5; 5.1.3), the Human Development Index (HDI, 3.3.6, 5.1.3), the MONET indicators (3.4.2.1), and also data available at the Federal Statistical Office <www.bfs.admin.ch>.

This analytical framework will be applied to the Swiss context in the next section of the chapter (5.3.3). In particular, a project from the Ticino Canton has been chosen in order to provide an illustrative example of spatial development in Switzerland, also briefly evaluating the outcomes (5.3.3.1).

5.3.3 Investigating the interface

This section of the chapter looks at some of the findings which emerge from the application of the model presented above (see section 5.3.2, figure 18) in the Swiss context. In particular, the interactions between good spatial planning and territorial governance in Switzerland, thus the top part of the model, are examined (5.3.3.1) before the analysis of the economic, environmental and social dimensions of sustainable well-being (5.3.3.2), the bottom part of the model. Then, an overview of the relationship between good spatial governance and planning and sustainable well-being in Switzerland is provided (5.3.3.3), bringing together the two parts of the model. This enables comment and considerations to be made on the actual contribution and impact of Swiss spatial governance and planning on the country's economic, environmental and social well-being.

5.3.3.1 Good spatial governance and planning

The first part of the model (figure 18, 5.3.2 above) helps to make a general assessment of the following aspects of good spatial governance and planning in Switzerland by focusing on: coordination of actors and integrated policy-making, engagement of citizens and stakeholders, and the adaptability of the system and place-based/territorial specificities and impacts.

In this respect, it is worth observing that, because the five TANGO dimensions (ESPON & Nordregio 2013) have various inter-dimensions (1, 2 and 3 have coordination as the overarching mechanism; 4 and 5 have knowledge as the overarching mechanism), they have been merged into three by the more recent ESPON COMPASS (2016) project; a choice shared also by the present research. Thus, dimension 1 (coordinating actions of actors and institutions) and dimension 2 (integrating policy sectors) are merged together in point 1 below 'coordinating actions of actors and institutions and integrating policy sectors'; dimension 3 (mobilising stakeholder participation) is looked at separately in point 2 below; and dimension 4 (being adaptive to changing contexts) and dimension 5 (realising place-based/territorial specifities and impacts) are merged in point 3 below 'being adaptive to changing contexts and realising place-based/territorial specificities and impacts'.

1. Coordinating actions of actors and institutions and integrating policy sectors

The following table (43) presents an overview of the assessments of the general performance of spatial planning and territorial governance (SP and TG in the

table) in integrating the territorial impacts of sector policies in Switzerland, and how this has changed in the period 2000-2016. The degrees of policy integration and coordination criteria are those used in the ESPON COMPASS 2016-18 analysis (COMPASS 2016). Likewise, tables 44 and 45 use criteria developed by the ESPON COMPASS survey. At the bottom part of the tables the change between the situation in 2000 and that in 2016 is shown.

Table 43: Policy integration and coordination (author's own)

degrees of policy integration	**integration of sector policies**	**coordination of sector policies**	**cooperation on sector policies**	**information exchange only**	**no contribution to integration**
	SP & TG ensure integration and the creation of joint policies across different sectors	SP & TG assist in coordination that leads to the adjustment of sector policies	SP & TG enable cooperation without adjustment of sector policies	SP & TG provide an information resource on different sector policies	there is no evidence of levels of integration of sector policies
		2016	2000		
Switzerland		←			

As seen in chapter four (4.3.1), six sectoral plans exist at the Swiss national level, concerning: transport, high potential agricultural areas, the electricity grid, military areas, storage sites for nuclear waste, and kindergardens (figure 19).

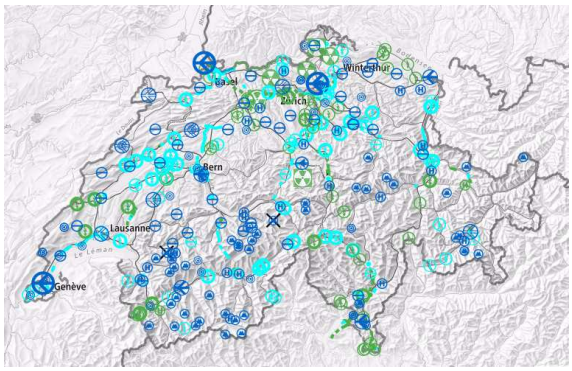


Figure 19: Overview of the various sectoral plans <https://map.geo.admin.ch/>

For the federal government, the sectoral plans are the most important planning tool to coordinate the territorial impact of the activities and to harmonise them with the cantonal requirements. In particular: the transport sectoral plan was approved in 2006; the military sectoral plan was approved in 2007 (expanded from an earlier plan approved in 2001); the power lines sectoral plan was

approved in 2001; the deep geological layers sectoral plan was approved in 2008; the surfaces for crop rotation sectoral plan was approved in 1992; and the very recent kindergarden sectoral plan was approved on 20 December 2017. As pointed out in 4.3.1, the participation procedures of the sectoral plans are currently under revision.

In accordance with Article 2 of the Federal Law on Spatial Planning (see 4.3.1), the Confederation's conceptions and sectoral plans must be adhered to, at all levels of their territorial impact. As regards vertical coordination among institutional levels of planning, the cantons and the municipalities take into account the conceptions and the federal sectoral plans in their territorial impact, ensuring compatibility and coherence throughout the different territorial scales. For example the 'tripartite agglomeration conference' enables the Confederation to coordinate policies vertically across the three levels of government. Wassenhoven (2007: 147) contrasts the country's strong vertical coordination with its horizontal coordination which is less strong. In any case, there is a certain amount of horizontal coordination in sectoral policy fields impacting on spatial planning. The horizontal cooperation can be seen, for example, in the work of the ROK (*Raumordnungskonferenz*), which came into being as a result of the Federal Council's realisation that effective regional and sectoral policy coordination can only take place when the spatial dimension is added to sectoral policies. It operates within the federal administration for the horizontal coordination of spatially relevant tasks with representatives of all institutions at the federal level (*ivi*), thus horizontally across ministries and also in relation to public private cooperation. As regards coordination across administrative borders, great attention seems to be given in Switzerland to cross-border territorial issues.

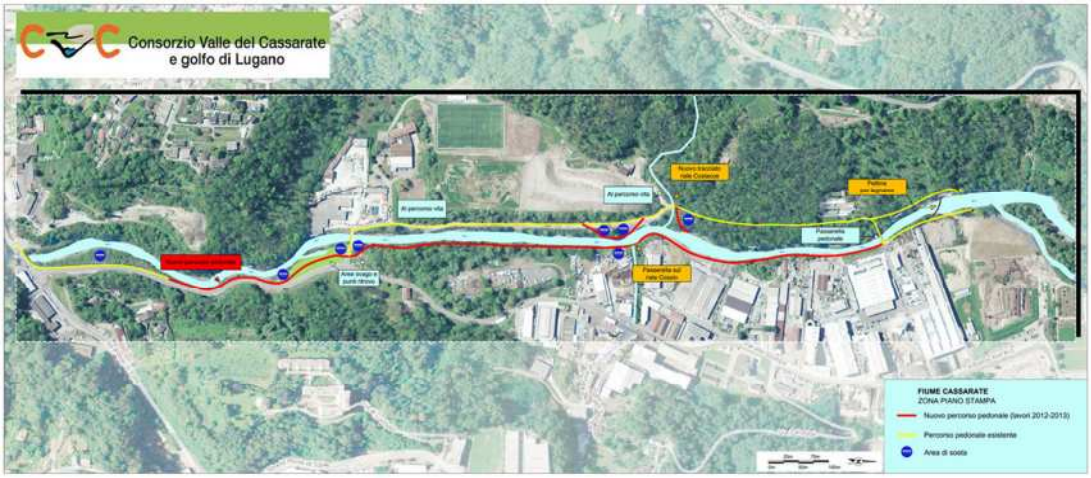


Figure 20: Cassarate River planning area (City of Lugano).

The project from the Ticino Canton provides an illustrative example of spatial governance and planning in practice, also briefly evaluating the outcomes (3.4.3). The *Foce del Cassarate e Parco Ciani* (Mouth of the Cassarate River and the

Ciani Park) project in Lugano is a response in line with federal principles and regulations on water management. In fact, there has been a certain amount of coordination between the different policy and planning sectors and among the institutional levels of planning (the Ticino Canton and the Municipality of Lugano had to cooperate and take into account the principles and guidelines of the federal level) and throughout the project there has been a strong stakeholder engagement (see point 2 below). Detailed information on the project is available at <http://www.lugano.ch/ambiente-territorio/edilizia-pubblica/foce-del-cassarate.html>.

In 2004, a public competition was launched with the support of the Ticino Canton and the Confederation. For the City of Lugano, the project is a key element in the connection between the recreational facilities located on the two shores of the Cassarate River: beach, harbour and sports facilities on the left bank and the public park on the right bank. At the planning level, the project of the river mouth is linked to the redevelopment of the park through the pedestrian-cycle path on the left bank of the river (figure 20). The river has also to be made accessible and usable to enhance the usability value of the space. Throughout the project implementation, the Canton and the Municipality of Lugano had to work in strong synergy (work procedures and methodology) to achieve the goals set. Moreover, the involvement of the Territorial Department (*Dipartimento del Territorio*) was ensured from the beginning by the Office of the Watercourses (*Ufficio dei corsi d'acqua*), which was represented in the jury at the contest of ideas, launched by the City of Lugano in 2004. In June 2014, the project was inaugurated, creating a new public space of 10,000 sqm in the heart of the city. The redevelopment of the river was also completed within the bigger frame of the *Piano Intercomunale della Stampa* - PRIPS (the Stampa Intercommunal Plan).

2. Mobilising stakeholder participation

Table 44 shows the degree to which citizens are generally engaged in spatial planning and territorial governance processes.

Table 44: Stakeholder engagement (author's own)

degrees of citizen and stakeholder engagement	**full & effective engagement**	**engagement in certain aspects or stages**	**weak engagement**	**access to information only**	**no engagement of citizens in SP and TG processes**
	citizens actively participate in the preparation and adoption of planning	citizens actively participate in certain parts of the planning	citizens passively engage in consultation with planning authorities	citizens receive information about development proposals	there is no evidence of citizen engagement

	instruments at all stages of the process	process	only
Switzerland	2016 2000		

The Swiss system of direct democracy envisages considerable participation by citizens in planning procedures, e.g. art. 4 (information and participation) of the 1979 Federal Law on Spatial Planning, as explained in 4.2.2.1. In practice, citizens are involved during the planning process, also through the use of direct democracy, even though the country has a large number of residents in some areas who do not participate and vote in referendums because they are not Swiss citizens, as observed in chapter two (2.3.3). For example, the planning procedure of the most recent federal sectoral plan on kindergardens, approved on 20 December 2017 (see 4.3.1), was drawn up by the federal services, in cooperation with the cantonal services, during the period 2014-2017. From April 4 to July 4, 2017, the relevant hearing was held in accordance with Article 19 of the ordinance on planning of the territory (OPT). Public participation has taken place within the same time frame.

As for point 1 (and also for point 3 below), the case study from the Ticino Canton provides an illustrative example of spatial development in Switzerland, also briefly evaluating the outcomes. In February 2011, the *Parco Ciani, giù le mani!* (Hands off the Ciano Park!) movement collected 5,558 signatures (many more than the 3,000 minimum requested for the quorum) in order to organize a local referendum against the realisation of the *Foce del Cassarate e Parco Ciani* project in Lugano. A strong debate started with the announcement of the collection of signatures for the referendum. During the referendum campaign, the citizens had the possibility to see the project sketches and plans.

In June 2011, the citizens of Lugano were called to vote in a referendum against or in favour of the redevelopment project of the Cassarate River mouth. 32.7% of the eligible citizens voted (9,748 of 29,851 citizens). There was a strong division between the Cultural Heritage Commission (*Commissione dei beni culturali*), against the project and contrary to the demolition of the river bank walls in defense of the historical values of the park, and the Landscape Commission (*Commissione del Paesaggio*), in favour of the project and of the redevelopment of the two shores. The referendum won with 4,886 votes in favour and 4,780 votes against. Thus, the project passed with only 106 votes (1.1% difference).

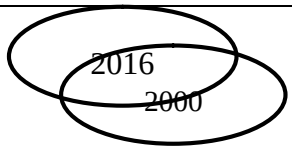
Giovanna Masoni, on behalf of the municipality, immediately promised to revise and improve the project considering the comments that emerged throughout the referendum debate. In any case, the referendum seems to have had a useful

function since it allowed everyone to access and consult detailed information and thus form well founded opinions on the project.

3. Being adaptive to changing contexts and realising place-based/territorial specificities and impacts

Table 45 presents an overview of the assessments of the extent to which spatial governance and planning in Switzerland is able to adapt to changing circumstances.

Table 45: Adaptability to changing contexts (author's own)

degrees of adaptability to changing contexts	**strong adaptation of TG & SP**	**moderate adaptation of TG & SP**	**weak adaptation of TG & SP**	**no evidence of adaption in TG**	**adaptation takes place outside formal TG & SP**
	institutions systematically monitor societal changes and the impact of policies, learn from experience, and revise the form, content or processes of TG & SP	some evidence of learning from experience and revision of limited aspects of TG & SP where that is possible	little evidence of learning from experience, governance and planning instruments are mostly rigid and are not easily revised	no evidence of adaptation in the form or content of TG & SP policy instruments, and rigid polices are enforced despite changing conditions	no evidence of adaptation in the form or content of TG & SP policy instruments although development is adjusted to changing conditions but outside the formal governance regimes, that is, informal development
Switzerland					

As pointed out before (2.3.1, 3.1, 4.2), Switzerland's territorial fragmentation means that there are considerable variations between planning practices and regulations in the different cantons (4.3.2). Thus, the Confederation coordinates and monitors the planning at the cantonal and local level, taking into consideration the people's and the country's changing needs and preferences through the use of direct democracy. For example, in the 2013 referendum, the Swiss population was asked to vote on the tightening of land use regulations, since urban sprawl is considered to be a major issue, also given the shortage of suitable land available for settlement (4.2). This would seem to show the strength

of the country's adaptability in the face of changing contextual conditions and requirements.

As regards specific climate change, resilience and environmental initiatives, on 3 March 2017, a pilot programme on climate change adaptation has been approved, showing the country's willingness to adapt to both the shifting international and national agenda. Within this framework, for example, the AquaFutura initiative provides recommendations and guidance on water management at the cantonal level.

In the *Foce del Cassarate e Parco Ciani* project in Lugano, the territorial governance and planning had to adapt to the local bottom-up decision-making. This is visible in the 2011 debate and referendum (see point 2 above for more information). In fact, the project's effectiveness was improved thanks to comments that emerged throughout the referendum debate. The redevelopment of the Cassarate River was also completed within the bigger frame of the *Piano Intercomunale della Stampa* −PRIPS (the Stampa Intercommunal Plan), since the area extends beyond the jurisdictional area of the Municipality of Lugano. This has led to more flexibility in the local policy-making, integrating more institutions and stakeholders.

The project and its implementation reveal how the local organs of territorial governance have learnt and are learning from the national and cantonal discourse and debate on sustainable development and rational land use. This can be seen in the project's adaptation to the changing ecological, environmental and social requirements of the territory and its citizens. Thus, the project shows: increasing concern for sustainable land use policy, increasing concern for reducing the risk of potential natural disasters (e.g. flooding, landslides), increasing awareness of the importance of public amenities which take into account the health and fitness of the local community.

The case study illustrates well the capacity of the community to discuss, accept and adapt to the project, as well as the capacity of the project and the local government to take into consideration and respect the needs of the community, the environment and territorial governance. Thus, the resilience and adaptation capacity of the project is also linked to the current and future social, environmental and political requirements of the context.

In general, the TANGO project (ESPON & Nordregio 2013: 54) observes and highlights that much of the policy analysis today focuses on governance and multi-level governance, such as vertical and horizontal coordination (points 1 and 2 above). Yet, little attention is being paid to the territorial dimensions of governance or to the adaptability and use of place-based and territorial specificities and impacts (point 3 above), which need to be further investigated. Overall, it would seem that broader policy processes, such as coordination of actors and institutions, cross-sectoral integration, stakeholder mobilisation, adaptive capacity, and realising territorial specificities and impacts, have

contributed to improving spatial governance and planning in Switzerland, thus positively influencing its citizens' well-being.

5.3.3.2 Sustainable well-being

In this part of the section, the bottom part of the model presented above (see section 5.3.2, figure 18), which focuses on the dimension of sustainable well-being, is applied in order to look at and comment on the three dimensions of economic, environmental and social well-being in the Swiss context. Some exemplification is provided to illustrate the influence of the spatial governance and planning system on these dimensions.

As seen in chapter two (see section 2.2.3), sustainability becomes much more tangible and relevant when QoL or well-being are discussed, since it implies, as noted, viewing sustainability through an everyday activity approach, taking into consideration those things that directly affect us, like eating, drinking and even breathing (Mulligan 2008). Moreover, the well-known sustainable development model (see figure 1, section 2.2.2), posits that interrelating and integrating the three economic, social and environmental capitals may bring benefits for human life. It also has to be remembered that dealing with QoL and well-being issues is complex due to the the wide range of factors that may have an impact on people's personal QoL and which consist of both an objective component (e.g. income) and a subjective one (e.g. feelings), as discussed in section 2.2.1.

1. Economic well-being

Economic well-being is one of the three dimensions comprising sustainable development (see section 2.2.2). As observed at the beginning of chapter five, Switzerland has very good economic framework conditions: Swiss GDP per capita is among the highest in the world. Thus, the country has a wealthy and successful economy, with good economic security, low unemployment and a highly skilled labour force (see section 5.1.1 for more information).

Yet, in order to reach a good level of economic development, the Swiss spatial governance and planning system has also helped by strengthening polycentric development and territorial cohesion, enhancing regional clusters of competition and innovation. For example, as Keiner points out (2005: 18), spatial planning policy in Switzerland has been strongly promoting the notion of polycentricity and the concept of the 'Swiss city network' is widespread in the discourse and practice in the federal offices and the cantons. Moreover, the *Project de Territoire Suisse* (Territorial Concept Switzerland) is based on the notion of polycentric development, centred round a structured network of urban centres, which range from metropolitan areas and agglomerations to towns and rural centres (OECD 2011: 97). Nevertheless, as regards territorial cohesion, the "Swiss approach to safeguarding a measure of national (spatial and economic) cohesion is potentially threatened by a reduction in the level of service in

transportation in more remote and thinly populated regions and by the (economic) effort to provide a high level transportation infrastructure" (Scholl 2008: 29).

Switzerland also ranks first in the 2015 Global Innovation Index (GII, 3.3.3), showing that the country has a high level of innovation, research and development, as well as economic prosperity. The MONET indicator on innovation and technology shows that a high level of education and of research greatly improves the level of competitiveness of a country. Thus, qualified specialists are needed to drive innovation in the country, which can also imply attracting researchers from other neighbouring countries. The overall number of researchers working full-time in the private economy and in universities in the Confederation has almost doubled since the early 1990s. MONET reports that around a third of the researchers in 2012 were female.

As regards regional clusters of competition and innovation, innovation promotion has been introduced by the NRP as an important part of regional policy, which could help improve the overall economic performance. Several regions in Switzerland have clusters which overlap, such as Zurich, Espace Mittelland and Central Switzerland. For the OECD (2011: 150), the "cross-border dimension of regional innovation policies should be given more prominence in regional actions, taking examples from successful cases and introducing indicators of results and outcomes to demonstrate the value-added of the initiatives". As regards smart growth and developing an economy based on innovation and knowledge, innovation promotion has been introduced by the NRP as an important part of regional policy, which could help improve the overall economic performance. Switzerland's polycentric territorial development has given rise to favourable framework conditions for policies intended to create a wider diffusion of innovation, unlike highly centralised countries, where there is often an over-concentration of resources in the capital. The strong potential for cooperation across the country's borders increases the possibilities for regions to take part in innovation promotion. A number of Swiss cantons are involved in cross-border partnerships, and they could extend their innovation collaboration further, for example, by establishing innovation advisory services to harness resources across the borders, or by the encouragement of technology transfer practices which can be implemented in these border regions (OECD 2011: 18). Spatial evidence of economic well-being can be clearly seen in the internationally recognised economic hubs of Zurich and Geneva and the high technology industry.

For the MONET indicator on employment, unemployment is one of the principal causes of poverty in developed countries and leads to social exclusion. Switzerland seems to be well positioned in this regard. Indeed, as of 2012, the country has a record high net activity rate (population between the ages of 15 and 64) of 82.4%, as reported by the Swiss Federal Statistical Office at the Workshop on Best Practice in Vocational Education and Training held in Bern on 7 January

2013. Nevertheless, even though the unemployment rate is low in Switzerland (in the second quarter of 2016, the rate was 4.3%), it seems to be rising slightly.

2. Environmental well-being

Environmental well-being is another of the three dimensions comprising sustainable development (see section 2.2.2). Switzerland would seem to have very favourable environmental framework conditions (for more information see section 5.1.2). In fact, it ranks high in the 2016 Environmental Performance Index (EPI): 16th out of 180 countries with a total score of 86.93.

Environmental performance in Switzerland is quite good as regards: health impacts, air quality, water and sanitation, water resources, agriculture, forests, biodiversity and habitat, climate and energy (see table 27 in section 5.1.2), as explained in the study carried out by the EPI. Fisheries are not taken into consideration since Switzerland is a land-locked country without access to the sea, but with large cross-border lakes.

Table 46: Health impacts (EPI 2016b)

Health impacts	**Score**	**Rank**
Environmental risk exposure	79.31	66

Overall, the environmental risk exposure (table 46) is also quite good. As pointed out in section 5.1.2, Switzerland shows safe conditions with respect to water, sanitation, and household air quality, but outdoor air pollution risk factors are similar to those in Congo (EPI 2016a: 37-38). In fact, air pollution (table 47) is mainly due to PM 2.5 excess (56.25) and the average exposure to PM2.5 is quite high (72.75). Generally speaking, air quality has improved significantly in the country, however not enough to protect people and ecosystems (OECD 2017b: 23), even though all the cantons have drafted programmes for air protection measures. Yet, the household air quality is very good (97.50), and Switzerland ranks top at an international level.

Table 47: Air quality (EPI 2016b)

Air quality	**Score**	**Rank**
Air pollution - average exposure to NO2	-	-
Air pollution - average exposure to PM2.5	72.75	125
Household air quality	97.50	1
Air pollution - PM2.5 exceedance	56.25	153

Switzerland has high levels of water and waste management and monitoring (e.g. a land filling ban was introduced on 1 January 2000, see 4.4.2). The country

also pays great attention to recycling. However, the OECD (2017b: 23-25) points out that, even though half of municipal waste is recycled, municipal waste generation is rising and its disposal could be improved. The quality of water (table 48) is very good since 80% originates from natural springs and groundwater and there are strict regulations regarding water quality.

Table 48: Water and sanitation (EPI 2016b)

Water and sanitation	**Score**	**Rank**
Unsafe sanitation	99.86	11
Unsafe drinking water	100	1

Table 49: Water resources (EPI 2016b)

Water resources	**Score**	**Rank**
Wastewater treatment	98.23	6

The nutrients used in farming, such as water and fertilizers, require provision and regulation by agriculture. However, too much unregulated nitrogen is currently entering the environment due to the excessive use of fertilizers on crops and fields, while in many countries water is a limited resource which needs to be managed carefully. In Switzerland, water resources are well-managed (table 49) and the nitrogen use efficiency and balance is very good (table 50), showing the importance that the country gives to the sustainable development of its land as regards pollution and climate change issues. Nevertheless, the use of nitrogen in agriculture "remains excessive and results in nitrogen deposition beyond the critical loads for ecosystems" (OECD 2017b: 17). A new agriculture policy framework has been in place for the period 2014-2017 (see 4.4.2).

Table 50: Agriculture (EPI 2016b)

Agriculture	**Score**	**Rank**
Nitrogen use efficiency	92.08	67
Nitrogen balance	100	1

The 2014 revision of the Federal Law on Spatial Planning emphasised the importance of sustainable development policies and protection of the environment (see 4.3 and 4.4.1). The country also pays great attention to the tree cover loss (table 51) and to the natural level of biodiversity and habitat (table 52). The MONET indicator on biodiversity shows that the populations of breeding birds at risk of extinction in Switzerland are decreasing. However, the OECD (2017b: 17-19) points out that the situation is still far from perfect: the protected areas are often not large enough or are poorly connected with each other and with European networks, and they do not fully meet conservation objectives. As a result, few habitats of national importance are protected and over a third of species are at risk.

Table 51: Forests (EPI 2016b)

Forests	Score	Rank
Tree cover loss	83.96	17

Table 52: Biodiversity and habitat (EPI 2016b)

Biodiversity and habitat	Score	Rank
Terrestrial protected areas (National Biome Weights)	78.07	107
Terrestrial protected areas (Global Biome Weights)	84.56	87
Species protection (National)	99.10	13
Species protection (Global)	100	1
Marine protected areas	-	-

As regards climate and energy (table 53), there is a high access to electricity, and the trends in CO2 emissions and in carbon intensity are also very high. The country is currently fostering sources of renewable energy in order to reduce emissions of greenhouse gases and air pollutants. The MONET indicator on energy consumption shows that the final energy consumption per capita has decreased since 1990, even though it is still high (MONET 2015). The recent OECD Environmental Performance Review of Switzerland (OECD 2017b: 17) confirms that energy consumption is still decreasing as well as becoming less intensive. Energy is an important topic of national concern and in a referendum held on 21 May 2017 the Swiss voted in favour of supporting renewable energy policies and banning new nuclear plans. The country would also seem to be generally willing to adapt to the international agenda in favour of improving environmental conditions, promoting specific climate change, resilience and environmental initiatives (e.g. water management, biodiversity, climate change, urban green).

Table 53: Climate and Energy (EPI 2016b)

Climate and energy	Score	Rank
Access to electricity	100	1
Trend in CO2 emissions per KWH	100	1
Trend in carbon intensity	76.71	47

As regards urban sprawl (see section 5.1.2 for more information), it is one of the major challenges facing planning in Switzerland and could give rise to dramatic results as regards land cover, carbon emissions and pollution, water and groundwater, fauna, as discussed earlier in the chapter (5.1.2).

The Swiss Federal Government is currently trying to improve the country's sustainable development, enhancing a more efficient and rational land use. There are various official actors who have been designated to control the environmental

quality of the country. As explained in chapter four, the Federal Office for the Environment (FOEN) is in charge of ensuring a sustainable use of natural resources, conserving landscape and biodiversity and trying to minimise natural hazards. The Swiss Federal Office for Spatial Development also has responsibility for ensuring that the Federal Government's activities observe the principles of sustainability. As also presented in chapter four, the 2013 referendum in favour of a revised Federal Law on Spatial Planning highlights a turning point in people's interest to preserve the Swiss landscape and to reduce urban sprawl. As regards trans-European risk management (which include the impacts of climate change), there are many interregional, cross-border disaster risk management projects involving cooperation between Italy and Switzerland (e.g. the Great St. Bernard pass and tunnel). Concerning the same geographical area, Gillet at al. (2007) describe a comparison of cross-border risk management in land use practices in Switzerland (Canton Valais), France (Rhône-Alpes and Provence-Alpes-Côte d'Azur) and Italy (Aosta Valley) carried out as part of an INTERREG project.

Over the years, strong cooperation has been established, with the exchange of technical visits to the areas for which they are responsible. Various conventions on exchange and mutual assistance have been drawn up and signed within the framework of established relations with neighbouring countries. For example, the convention signed together with Italy's national Department of Civil Protection (*Dipartimento della Protezione Civile*) is the formal framework for transalpine civil engineering assistance if there is a serious earthquake. Switzerland's spatial planning policy would also seem to have been strongly promoting a more resource efficient, greener and more competitive economy in order to reach a sustainable development and the country's regional policy has been significantly transformed in recent years so as to render the economy more competitive and innovative. Thus, the NRP (2.3.4, 5.3.1.1) concentrates on the financing of programmes, projects and initiatives, which foster competitiveness, innovation and value creation in the various regions. The country has also tried to strengthen ecological structures as well as the resilience (5.3.3.1) of its cultural and natural heritage.

3. Social well-being

Social equity is the third dimension featuring sustainable development (see section 2.2.2). As illustrated at the beginning of chapter five (section 5.1.3), Switzerland has good social framework conditions: it ranks quite well in the global analyses by the Gini coefficient (3.3.5, 5.1.3), the most common index used to measure (in)equality (2.1.7). Moreover, even though there is a strong cultural and language fragmentation, the country would appear to try to reconcile conflicting interests and to ensure that decisions are made in the wider public interest, through the use of direct democracy. However, the gender gap highlights an ongoing inequality in the country: according to the MONET indicator on equality, men still generally earn higher salaries than women, even though they might have the same qualifications and the same job position. There is a slight

improvement, as the wage gap between women and men has been gradually narrowing in Switzerland since 1994. The country also ranks high in the Human Development Index (HDI): it is placed 2nd out of 188 countries (5.1.3). Thus, the trend seems to be increasing: between 1980 and 2014 Switzerland's HDI value rose from 0.809 to 0.930, an increase of 14.9 percent or an average annual increase of about 0.41 percent.

As explained in 2.3.3 and 5.3.1.5, in Switzerland there is a strong use of direct democracy, which positively impacts the QoL of its citizens, who are not only able to elect their representatives, but, as a result of direct democracy, can also vote on proposals or bills at the federal, cantonal and municipal level. Because of the delegation of powers, municipalities have a high degree of autonomy and people are frequently asked their opinion in local referendums, even if a Swiss citizen lives outside the country. Moreover, all residents, as the Urban Audit 2016 points out, including those without political rights, can participate in a citizens' forum and consultations (4.2.2.2). Thus, the country would seem to try to ensure through representative and participative democracy that relevant interests are represented and are given voice in place-based/territorial governance processes, raising social awareness, increasing accountability and fostering civic engagement. Moreover, the country's education system helps to increase civil awareness and social and political engagement and participation.

In Switzerland there would seem to be a certain degree of public accountability, so that those responsible for place-based decision-making are generally accountable to the public, together with a certain amount of transparency, which ensures that the tasks and procedures of territorial governance are open and visible to the public. Nevertheless, in parallel, a certain level of opaqueness, as explained in 2.3.4 and 4.6.2, still continues to exist in Switzerland as regards both the land market and regional policy (see also 6.2.2). In any case, as commented by the OECD (2014: 56), "engaging citizens from an early stage of the measurement initiative builds momentum for action, facilitates policy adjustments when necessary, and increases accountability and trust".

In order to promote a more inclusive development and lead to a high-employment economy which will foster territorial economic and social cohesion, the spatial planning system has tried to strengthen regional identities, making a better use of territorial diversity. Indeed, as observed above (4.2.2, 5.3.1.3), the Confederation plays a key role in coordinating and monitoring planning across the national, cantonal and local levels and the use of direct democracy enables the population's wishes to be expressed. In general, current Swiss regional policy can be considered to be increasingly designed to establish competitive, supraregional, supracantonal and international value creation systems. The NRP makes an important contribution to the creation and maintenance of jobs in the targeted areas, reducing regional disparities and maintaining the decentralised settlement structures in Switzerland (2.3.4, 5.3.1.1), which has social as well as economic

repercussions. Swiss spatial governance and planning has also tried to enhance an equal access for all to infrastructure and know-how policy (6.2.1).

5.3.3.3 Overview

Overall, it would seem that spatial governance and planning in Switzerland is an integral part of the country's aim to achieve a higher level of sustainable development. The figure below (21) summarises the impact of the first five TANGO dimensions of good territorial governance. The ranking goes from 1, the lowest, to 5, the highest (the ranking values attributed have been chosen by the author for the present survey and are based on the analysis presented in the previous sections). All the dimensions in the figure reach a good level, with the mobilisation of stakeholder participation achieving the highest level.

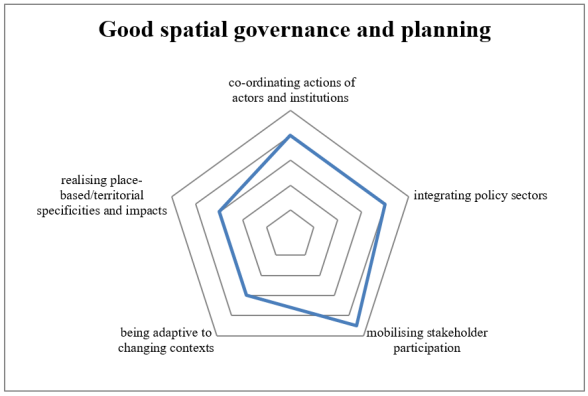


Figure 21: Good spatial governance and planning (author's own)

As seen throughout the study (2.3.3, 4.2.2.2), stakeholder participation seems to be carried out in an effective way in Switzerland through direct democracy and participative processes. Indeed, as shown in figure 21 above, the mobilising stakeholder dimension ranks high in Switzerland. Also the coordination of actors and institutions and the integration of policy sectors seem to be working quite well within the country. As explained above in 5.3.3.1, in Switzerland there is a good vertical coordination among institutional levels of planning, as well as a quite good horizontal coordination among policy fields impacting on spatial planning. Moreover, considerable attention is given to cross-border territorial issues. This is of particular importance given the geographical location of Switzerland and the country's collocation at the heart of Europe but outside the EU (see 2.3.7). Furthermore, the institutional actors have to take into account the federal sectoral plans and ensure coherence throughout the different territorial scales. Thus, the country would seem to show a good level of coordination between the different sectoral policy and planning strategies and implementation (see 6.2.2).

As regards the country's adaptation to contextual changes and realising place-based/territorial specifities and impacts, it seems that Switzerland is moving in this direction. As seen in 5.3.3.1, the country's adaptive territorial governance and place-based decision-making seem to benefit from the use of referendums and direct democracy (see also 6.2.2). Currently, the country is promoting specific climate change, resilience and environmental policies, programmes and projects. This highlights the country's interest in aligning its national objectives to those of the international debate.

Therefore, good spatial governance and planning (thus the upper part of the interface between the good spatial governance and planning and sustainable well-being model, see figure 18, 5.3.2) would seem to influence people's well-being, as well as to have a positive impact on the country's overall economic, environmental and social standards. This upper part of the model is thus closely linked to the next part of this section, which focuses on the three dimensions of sustainable well-being (economic well-being, environmental well-being and social well-being). Indeed, people's well-being in turn would also seem to determine good spatial governance and planning conditions within place-based/territorial specifities and impacts, acting as a feedback mechanism.

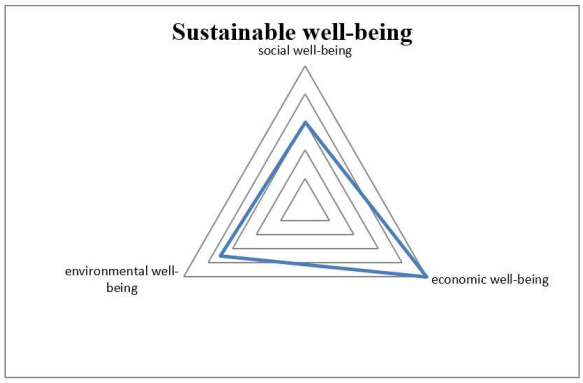


Figure 22: Three dimensions of sustainable well-being (author's own)

As seen in section 5.1, Switzerland would seem to have good framework conditions in terms of economic, environmental and social well-being. In figure 22, as for figure 21, the ranking goes from 1, the lowest, to 5, the highest (the ranking values attributed have been chosen by the author for the present survey and are based on the analysis presented in the previous sections). Figure 22 shows that in Switzerland there would seem to be a high level of economic well-being, while environmental and social well-being are also at a quite high level.

It would also seem that the Swiss governance and planning system has helped the country to reach a good level of economic development (5.3.3.2). Spatial evidence can be seen in the country's promoting of a stronger polycentric development and territorial cohesion, which has been reinforcing the country's economic and social structure. For example, the transportation system has been

enhanced to better connect the rural and mountain municipalities to bigger urban areas, providing citizens with a better house-work mobility, and better job and income possibilities. The Swiss system has also been enhancing regional clusters of competition and innovation, improving the country's economic performance. For example, innovation promotion has become an important component of regional policy (e.g. the NRP, 5.3.3.2), strengthening its cross-border dimension which could also lead to better technology transfer practices, to better and smarter industrial practices, and to an increase in know-how and know-how exchange.

The Swiss governance and planning system has also been enhancing a more efficient and rational land use, as can also seen in 5.3.3.2, helping the country to reach better environmental and sustainable development. In order to reach a high level of sustainability, Switzerland's spatial planning policy would seem to have been strongly promoting a more resource efficient, greener and more competitive economy. Swiss regional policy has undergone a significant transformation in recent years in order to secure an innovative and competitive economy (see NRP, 2.3.4, 5.3.1.1). This can also be seen in the work carried out by the Federal Office for the Environment (FOEN) and the Swiss Federal Office for Spatial Development (ARE), as well as the creation of the MONET indicators (3.4.2.1). These actors and indicators have the responsibility for monitoring and ensuring that the federal government's activities observe the principles of sustainability and control policy implementation. As seen in chapter four (4.4.1), people's interest in preserving the Swiss landscape and in reducing urban sprawl would seem to have increased, helping the topic of environmental quality achieve an important position within the national planning discourse (4.4.2). Thus, the country has been strengthenening its natural and cultural heritage, as well as promoting trans-European risk management and cross-border cooperation.

As also noted in in 5.3.3.2, the Swiss governance and planning system has been trying to strengthen regional identities, making a better use of territorial diversity, in order to help the country to reach a more inclusive and social cohesion. Indeed, the use of direct democracy and referendums (see 6.2.2) has been important in order to integrate people's interest and interests into policy-making and to overcome territorial and social diversity.

For the OECD (2014: 106), any striking gaps between objective socio-economic conditions and perceived QoL can provide indications of where public policy may fail to deliver the expected outcomes, and should be thoroughly reviewed by all relevant actors. Such striking gaps do not seem to be present in Switzerland.

Chapter 6

Conclusions

This chapter is divided into three sections. The first (6.1) points out some general considerations, bringing together some of the main ideas generated during the previous chapters. It then (6.1.1) revisits the research hypotheses presented in chapter one (1.3), in order to see whether they have been confirmed and verified by the study. The second section (6.2) presents some of the main findings achieved by the researcher. First, it focuses on the relationship between spatial governance and planning and well-being, which is the central theme of the thesis. In particular, it would seem that effective measurements on well-being can be useful for policy-making. Then, in 6.2.1 it focuses on the interactions between spatial governance and planning and well-being, in the light of Zetter's (2008) assumption that the planning system makes a positive contribution to Switzerland's high economic, environmental and social standards. The interactions between framework conditions and spatial governance and planning are presented, as well as those between framework conditions and spatial governance and planning outcomes. In 6.2.2 certain features which characterise good spatial governance and planning in Switzerland are discussed. The next subsections respectively reappraise the collocation of Switzerland in European planning classifications (6.2.3) and the country's relationship with the European Union (6.2.4). After some further reflections on the topic of the study, the third and final section (6.3) makes a number of recommendations, also as regards possible directions for future research. 6.3.1 returns to the connections between place-based well-being and spatial planning, 6.3.2 presents an equation to illustrate the relationship between spatial planning and well-being, while 6.3.3 sets out some of the possible areas for future investigation.

6.1 General considerations

As seen throughout the study, it is important to understand the relationship between different urban development patterns, together with urban planning, local development policies and life satisfaction, and to identify what dimensions of urban development and planning patterns are affecting well-being. Indeed, "understanding the nature of the relationship between life satisfaction and individuals' direct environment is an essential question that lies at the core of urban planning policies" (Brown et al. 2015: 8). Moreover, because of its strong links with other dimensions of well-being, like housing, transport and environmental health, "land use is an important spatial component underlying well-being metrics" (OECD 2014: 80). For example, urban sprawl has become an important public policy issue in Switzerland in recent years and policy measures have been adopted to limit sprawl, such as stricter regulations on land development (4.4.3, 4.4.4). However, such measures are not necessarily based on an assessment of the implications for the inhabitants' well-being (*ibid.*: 70).

In any case, every planning policy or decision has a considerable economic, environmental or social outcome, which might be more immediately evident or less so. Moreover, if a planning policy or project works well in a certain context, it might not work in another, even in the same country, which can have an impact on assessment. For Anderson et al. (2014: 344) "locally generated evaluation results are always likely to be more persuasive to members and officers in a local planning authority than results imported from studies elsewhere". This contextual aspect can also impact on leadership, Hambleton (2014: 19) for example notes that a number of powerful leaders in today's world are 'place-less', in the sense that they might be unconcerned about the territorial impact of their decision-making, and he draws attention to the importance of a civic leadership which is concerned for the well-being of the communities living in a specific place (2.1.3). He further suggests (*ivi*) that a place-based approach to leadership in spatial planning can help reduce the negative impact of globalisation by creating local socio-economic capital and by encouraging dialogue among social groups.

6.1.1 Returning to the research hypotheses

The five main research hypotheses presented in chapter one (1.3), have been explored through the study.

The first hypothesis (1.3), which focuses on the connection between the efficient performance of a planning system and the well-being of a country, also in relation to property rights and how land use regulations are established and maintained, has been discussed in chapter two (2.2.4). This hypothesis would seem to have been confirmed by the present study. Indeed, there can be no doubt that land use regulations influence the QoL of their inhabitants, by regulating amenities that make communities more attractive and improve the well-being of

those living in them. Thus, spatial planning and land use regulations can be seen as means in order to reach a higher well-being. It is certainly worth exploring the connection between the efficient performance of a planning system and the well-being of a country. Indeed, the collocation of current Swiss spatial governance and planning within the neo-performative model (4.6.2), with its focus on property rights and land use, emphasises the importance of the connection of the performance of a planning system with well-being (see also 6.2.1 below).

The second hypothesis (1.3), which looks at the concepts of efficient and successful spatial planning and at the importance of involving all of the stakeholders, has been deeply discussed in chapters two (2.1.3, 2.3.3, 2.3.4) and five (5.2.2). This hypothesis has also been tentatively confirmed. In fact, participatory processes, that create consensus and mutual responsibility by engaging all the interested stakeholders (private developers, architects, public sector, academia and residents) in the achievement of spatial planning objectives, can certainly help improve the well-being of the community, not just the economic benefit of a few.

The third hypothesis (1.3), which puts into relation land use regulations and their economic effects, has been discussed in chapter two (2.1.4) and, as regards the development of spatial planning in Switzerland, in chapter four (4.3), and would also seem to have been confirmed. Indeed, the research has demonstrated the importance of exploring the effects of land use regulations in relation to resource allocation and people's well-being, since this dilemma (4.4.1) lies at the heart of the Swiss planning debate (for example, it was one of the central issues in the 3 March 2013 referendum).

The fourth hypothesis (1.3), which looks at the link between sustainability and spatial planning, has been examined in chapters two (2.1.8 and 2.2.2), four (4.4) and five (5.2.2). This topic is important for the present study, because Switzerland was criticised in 2008 for not reaching the high requirements of sustainable development. The importance of the issue can be seen in the country's growing attention to policies which enhance the preservation of natural landscapes and the countryside, as well as the reduction of urban sprawl (it was another of the central topics in the 3 March 2013 referendum, see 4.4.1). The debate would still seem to be open on this hypothesis, yet the partial success of the country's sustainability policies can be seen in the HDI index (3.3.6, 5.1.3) where Switzerland ranks first out of 188 countries in actions to preserve the environment.

The fifth hypothesis (1.3), which focuses on the comparison and discussion of the existing methodological tools that enable valid comparison and evaluation of spatial planning systems, is presented and investigated in chapters two (2.1.2) and four (4.1, 4.6) and would also seem to have been confirmed by the study and survey. Indeed, the existing methodological tools for analysing governance and planning systems are certainly useful, but they need to be reappraised and fine-

tuned in order to enable valid comparison and evaluation of systems in terms of their socioeconomic effects (see recommendation in 6.3.3 below).

6.2 Main findings

While it is not always evident, it is generally assumed that spatial planning has an important role in dealing with the complex and changing forces relating to people's well-being, whether economic, environmental or social. After all, this has always been the main argument for legitimating spatial governance and planning activities in modern states. Overall, it emerges from this study that framework conditions would seem to favour the spatial governance and planning of a country, in this case Switzerland, even if they are not necessarily deterministic. Thus, the analysis suggests the strong potential of integrating spatial data on urban structure and characteristics with survey data on life satisfaction and, more generally, the appraisal of local environmental outcomes, a finding that is in line with that of the OECD (2014: 71). Hence, it can be concluded that effective measurements on well-being can be useful, not only for policy-making in general terms, but also (or especially) for the orientation of spatial governance and planning systems.

6.2.1 The interactions between spatial planning and well-being

The analysis of the interaction between spatial governance and planning has been carried out and investigated in chapter five (5.3), with the application of the interface model (see figure 18, 5.3.2) in the Swiss context. Overall, it emerges that good spatial governance and planning (the upper part of the model) would seem to have a positive impact on the economic, environmental and social well-being (the bottom part of the model) of the country. Some exemplification has been provided in section 5.3.3, to show the spatial evidence of the influence of the spatial governance and planning system (5.3.3.1) on these dimensions (5.3.3.2).

Indeed, the use of well-being indicators, such as those presented in 5.3.2, could provide a fruitful means of monitoring and appraising the effectiveness of governance and planning policies. Thus, the bottom part of the model (figure 18, 5.3.2) is also strongly connected to the upper part, showing that a better knowledge of the sustainable well-being dimensions and their relative indicators is important in order to provide a more efficient, effective and sustainable spatial governance and planning.

More in particular, the research also verifies and endorses Zetter's (2008) assumption, presented in chapter one (1.1) and analysed in chapter five (5.2), that the planning system makes a positive contribution to Switzerland's high economic, environmental and social well-being standards. The table below (54) shows some of the interactions between the framework conditions and spatial governance and planning in Switzerland.

Table 54: Interactions between framework conditions and spatial governance and planning

Framework conditions	**Spatial governance and planning characteristics**			
	structure	*tools*	*discourse*	*practices*
Economic conditions - wealthy and successful economy - low unemployment - highly skilled labour force - competition and innovation	- 'transparent' legal system - political and economic stability	- NRP (New Regional Policy)	- polycentric development - territorial cohesion - regional clusters of competition and innovation	- internationally recognised economic hubs (Zurich and Geneva) - high technology industry
Environmental conditions - good environmental performance - good (low) levels of pollution - resilience - urban sprawl	- Federal Office for the Environment (FOEN) - Federal Office for Spatial Development (ARE)	- 2014 revision of the Federal Law on Spatial Planning	- landscape protection - trans-European risk management - ecological structures	- more efficient management of land use to deal with: - scarcity of land - urban sprawl - traffic congestion
Social conditions - equity - good education system - democratic legitimacy - public accountability - transparency	- high degree of cantonal and municipal (local) autonomy	- direct democracy - local referendums	- regional identities and territorial diversity - parity of access to infrastructure and know-how	- citizen active participation in government and planning processes - sensitivity to integration and equity issues

Indeed, it would seem that the spatial governance and planning characteristics could well have a positive influence on the country's high economic, environmental and well-being standards. For example, as discussed in chapter five (5.3.3.3), the use of direct democracy and of local referendums would seem to favour citizens' political involvement in decision-making and to help overcome territorial and social diversity. Spatial evidence can also be seen in the country's promotion of polycentric development and of territorial cohesion, which has been aiming to reinforce the country's economic and social structure. Moreover, Swiss spatial governance and planning has been promoting a policy of equal access for all to infrastructure and know-how, in line with EU policy (see 6.2.4), thus aiming to ensure a more inclusive growth and social cohesion.

The study also shows that good (economic, environmental and social) framework conditions would seem to favour the spatial governance and planning of a country, in this case Switzerland, even if they are not the only determining

factor. The table below (55) further illustrates the relationship between framework conditions and spatial governance and planning outcomes. In particular, the table brings together the country's economic, environmental and social framework conditions (analysed in 5.1.1, 5.1.2 and 5.1.3), planning outcomes (analysed in 5.3.1) and indentifies some outcome indicators.

Table 55: Interactions between framework conditions and spatial governance and planning outcomes (the questions on planning outcomes are those posed by Gleeson 2002, see section 5.3.1)

	framework indicators	**rank**	**governance and planning objectives**	**planning outcomes**	**outcome indicators**
economic	Gross Domestic Product (GDP)	very high	improve economic competitiveness and resilience	how does planning increase efficiency and innovation?	- flexibility and experimentation - clusters of competition and innovation - high employment economy - economy based on knowledge and innovation - competitiveness of regions and strong local economies
	Global Innovation Index (GII)	very high			
environment	Environmental Performance Index (EPI)	very high	improve the sustainable use of natural resources and protection of the environment	how does planning improve environments?	- risk management (including the impacts of climate change) - ecological structures and cultural resources
social	Gini index	high	improve social cohesion and social exclusion	how does planning improve social environments?	- stakeholder engagement - democratic legitimacy - public accountability - integration of interests - transparency
	Human Development Report (HDI)	very high			

Indeed, good economic, environmental and social framework conditions would seem to provide initial conditions that then favour the creation of good economic, environmental and social policy-making. For example, the country's high ranking within the Human Development Report (HDI) reflects the country's use of public accountability and of direct democracy in planning policies, programmes and projects that aim to improve the social environment (see 5.1.3 and 5.3.1.3).

6.2.2 Key features of effective spatial planning in Switzerland

Looking in more depth at chapter five, thus taking the study beyond the five criteria adopted by the ESPON TANGO project (5.3.2), certain aspects emerge which enhance spatial governance and planning in Switzerland (figure 23 below), such as:

1) a good coordination and distribution of powers

In Switzerland there is a good decentralisation and distribution of powers, enhancing both horizontal and vertical cooperation between the different administrative levels (5.3.3.1). The federal level ensures coherence and compatibility across the various levels and coordination across the different sector policies. Great attention is also given to cross-border territorial issues. For Schultz et al. (2003: 327), this "reflects the Swiss tradition of subsidiarity, while accepting the fact that many spatial conflicts, especially those that extend beyond cantonal or communal boundaries, can only be solved by coordination on all levels". Thus, multi-level governance and cross-sectoral coordination enable solutions to spatial conflicts to be found more effectively. A good distribution of powers across levels is also helped by the consensual choice of political actors by the local population through the use of direct democracy. For TANGO (ESPON & Nordregio 2013: 31), sectoral conflicts often have economic, social and environmental interests and often the dominating sectors are those with an economic profile rather than an environmental one. This would also seem to apply for the Swiss case. However, the policy sectors with an environmental profile are increasingly gaining recognition in the governmental and planning arena.

2) a good communication between stakeholders

In Switzerland, both governmental (formal) and non-governmental (informal) actors are able to influence decision-making processes, also through the use of direct democracy. Actors at all levels and sectors are regularly invited to meet and discuss the different policies and actions, increasing knowledge, dialogue and cooperation. However, because of its historical, geographical and linguistic characteristics, Switzerland does not have an obviously cohesive identity and there are strong cultural and linguistic differences between the cantons (2.3.1, 4.2), which may give rise to misunderstandings and conflicts between stakeholders when dealing with planning issues, for example, when they extend beyond administrative boundaries, unless they are taken into account in the policy-making.

3) a good engagement and participation of citizens

In Switzerland there is a strong participation of citizens in both the government and planning processes which is closely linked to and overlaps with the country's democratic legitimacy, public accountability and transparency (point 4 below). Public meetings, workshops and conferences, for example, can be organised in

order to be more transparent during the proposal of territorial policies and governance, and urban projects (see e.g. the illustrative case study from the Canton Ticino, 5.3.3.1). The issue of transparency is important and while the Swiss system of spatial governance and planning is generally considered to be open and transparent, this is not always the case. Both the OECD and Gerber, for example, comment on the continuing opaqueness of, respectively, Swiss regional policy, which "has become even more opaque" despite the NRP reforms (OECD 2002: 117), as noted in 2.3.4, and the Swiss land market which "remains very opaque" (Gerber 2016: 204), as seen in 4.6.2. This suggests an ongoing lack of transparency in some areas of Switzerland's land use and policy-making, which is presumably, like the *Burgergemeinde* (see 4.5.2), deeply rooted in the country's local traditions and history. Moreover, there have been a number of recent cases regarding planning projects in the Zurich area in which the discussion on certain land use topics and projects has occurred without a complete public consultation process (Martina Koll-Schretzenmayr, personal communication). One of these was the large-scale urban regeneration development project in 'Zurich West' (Rérat 2012) where, despite a consultative forum which provided objectives for improvements and connected projects, due to economic pressures, the city officials and property owners developed solutions for the future development at a relatively rapid pace. Thus, as Wassenhoven (2007: 303) referring to the same urban regeneration development comments, "the participation of the public in the plans and processes was consequently neglected".

In any case, the country is gradually introducing e-democracy into the election and consultation procedures (5.3.1.5). For example, in summer 2017, the Federal Government gave permission for the cantons of St. Gallen and Aargau to use the CHVote system of e-voting in the September referendums, thus joining six other cantons using the system (Edwards 2017).

4) a good democratic legitimacy, public accountability and transparency

In Switzerland, democratic legitimacy and public accountability ensure that relevant interests are well represented in governance and planning processes (5.3.3.1). Representative and participative democracy takes place though the use of direct democracy at the national, cantonal and local levels, strengthening public accountability. Media channels are important tools that spread information as regards territorial governance and urban projects. For example, the official Swiss governmental sites are continuously updated, making accurate current information and data available to the interested citizens, thus strengthening the system's transparency and accountability. This shows the government's aim to be more open and visible to the public. Yet, it is important to remember that the success of such a policy depends on the citizens being proactively interested in taking part in the government and planning debates.

5) a good place-based adaptation to changing contexts

As seen in chapter five, Switzerland seems to be able to adapt successfully to changing circumstances and to take into consideration place-based/territorial specificities and impacts. For example, as regards climate change, resilience and environmental initiatives, various pilot programmes have already been delineated and approved (5.3.3.1). These programmes could lead to new territorial governance arrangements, more flexibility and experimentation, helping to deal with long-term challenges, such as climate change, and unexpected events, and making the system more resilient. Moreover, adaptive territorial governance and place-based decision-making seem to benefit from the use of referendums and direct democracy (see e.g. the project from the Canton Ticino, 5.3.3.1), enhancing the concepts of negotiation and mediation. Administrative structures at the national, cantonal and local level also seem to adapt quite well to cross-border cooperation, projects and policies.

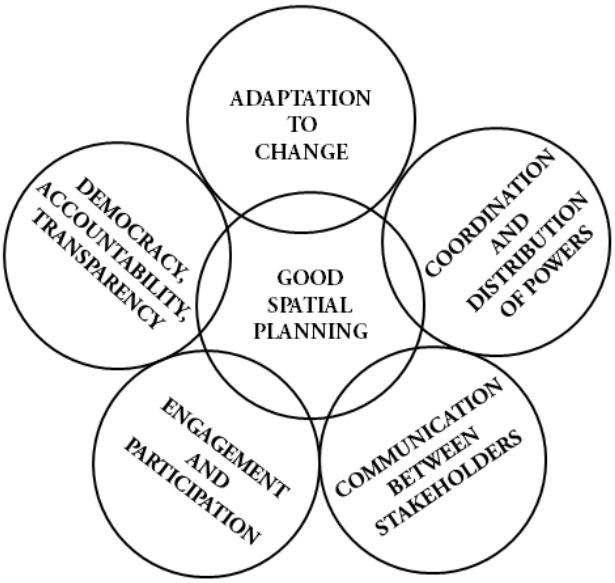


Figure 23: Five key features of effective spatial planning in Switzerland

6.2.3 Repositioning Switzerland

This study has also extended research on the classification of planning systems (4.1), reappraising the collocation of Switzerland in European planning classifications (4.1.1, 4.1.2, 4.1.3). In brief, the Swiss planning system can be classified within the Continental Law Family and within the Germanic Family's legal traditions (4.6.1, table 25). As regards the classification of ideal types, the Swiss planning system can also be collocated within the comprehensive integrated approach (see 4.6.1, table 26), even though a recent study (Silva & Acheampong 2015: 14) suggests that Switzerland could also be classified within the land use management approach.

If the classification is made on the way planning systems deliver transformation rights (4.1.4), it seems that spatial planning in Switzerland can broadly be classified within the neo-performative model (4.6.2, figure 13). In a neo-performative model, with its focus on land use regulation and the allocation of property rights, at the local level both the municipality and the developer can initiate the spatial development process. As explained in 4.6.2, both are able to work on the project plan, normally based on a programme indicating the objectives of a plan and, if a private developer is involved, this programme is generally worked out after negotiations between the municipality and the developer.

These neo-performative features seem to characterise many of the recent and current developments of spatial planning and governance in Switzerland, as discussed in sections 6.2.1 and 6.2.2 above, especially as regards land use. They are also evident in Knoepfel's (2016) comments on current Swiss land use practices, as observed in 4.6.3. Thus, it would seem that the neo-performative model in its place-based contextualisation(s) typifies Swiss spatial governance and planning today and is also considered to be making a positive impact on the economic, environmental and social well-being of the country and its people.

6.2.4 Switzerland and the EU

A further finding, linked to the concept of Europeanization, is on the relationship between Switzerland and the European dimension (2.3.7). As regards the top-down influence of the EU on the Swiss spatial governance and planning system, it seems that the impact of EU policies (instrumental influence) is stronger than that of EU directives and sectoral legislation (structural influence), and of EU discourse (dialogic influence) (Berisha et al. Forthcoming). This can be seen in the country's involvement in EU activities and projects and the increasing adoption and implementation of new cycles of European policies, as illustrated below.

Concerning the influence of EU policy, the implementation and influence of European policies, through projects such as INTERREG and URBACT, has led to increased transnational cooperation and encouraged dialogue, especially in the Swiss cross-border regions and municipalities (see for example Gillet et al. 2007). The influence of EU policies can also be seen in the creation of the NRP (see 2.3.4, 5.3.1.1), which promotes European territorial cooperation, as well as value creation, innovation and competitiveness in a sustainable way. Switzerland is currently participating in INTERREG V (A-B-C) for the programming years 2014-2020 (e.g. Alpine Space). The cities of Zurich, Basel and Lugano have been participating in URBACT projects, improving and strengthening the partnership and cooperation with neighbouring municipalities. Moreover, on a macroeconomic scale, Swiss agricultural policy has followed a historical path similar to that of the EU Common Agricultural Policy.

As regards the impact of EU sectoral legislation, Switzerland is not a member of the EU and so there is no legal conditionality pushing for the transposition of EU sectoral legislation on the country's spatial planning system. There is, however, a certain amount of indirect influence and there are shared initiatives, such as the bilateral agreements and the EU projects in which Switzerland participates. In fact, there has been an increase of attention in: energy legislation (e.g. on the opening of new opportunities in the renewable energy market, Swiss goals largely correspond to the EU targets); environmental legislation (e.g. the creation of the Emerald Network in November 2016, see sections 4.4.2 and 5.3.1.2); transport legislation (e.g. the opening of the new Gotthard Tunnel in December 2016 illustrates how the national policy takes into major consideration the key European transport corridors, 4.4.2).

Concerning the influence of EU discourse, EU policy documents, strategies and initiatives, such as the European Spatial Development Perspective (ESDP), have brought, to a certain extent, changes within the Swiss planning discourse. For example, Switzerland shares the same aims as the ESDP, such as "a polycentric urban development and a new relationship between urban and rural areas", "equal access for all European regions to infrastructure and know-how", and "prudent management of the natural and cultural heritage" (OECD 2002: 91). Since 2002, Switzerland has also been participating in ESPON programmes, establishing relationships with long-term international partners, showing a certain openness to the EU discourse. The ARE, on its website (accessed on 11 December 2017), declares that the participation in the 2013 ESPON programme "has also helped Switzerland establish a number of valuable relationships and build up its own international network of long-term international partners".

As regards the bottom-up influence of the Swiss spatial governance and planning system on the EU, it seems that the impact is not very strong. According to the OECD (2002: 91), even though Switzerland is not a member of the EU and is not part of the ESDP, the country commented on the first draft during the process of preparation. Yet, Switzerland has been witnessing a "fading level of interest in the application of ESDP ideas" (ESPON 2006: 106). Nevertheless, Switzerland contributes with its own funds to the EU enlargement aspect of Cohesion Policy (5.3.1.2). While Switzerland's membership of EU projects means it can also express its own perspective or viewpoint on the EU spatial planning topic in question. A further aspect is that accurate and specific information on Switzerland is incorporated into the projects. For example, based on the Swiss experience in defining the so-called 'action areas', the current ESPON project on Action Areas (ACTAREA) has been exploring the added value and potentials of new forms of cooperation areas.

In short, good national, regional, local and cross-border spatial governance and planning would seem to help the achievement of better reciprocal territorial cohesion in Europe and of a more effective application of EU Cohesion Policy.

Returning to the rationale underpinning the present research, it would seem that the convergence of the various aspects discussed above (thus, the five key features of effective spatial planning, the evolution of the place-based neo-performative model and the coherence with European policies – in spite of the fact that Switzerland is not a member of the Union) characterises Swiss spatial governance and planning today. Indeed, this convergence could well make a contribution to ensuring that the spatial governance and planning system is able to positively influence the country's and its people's well-being.

6.3 Reflections and recommendations for future research

This research has shown that choosing a range of appropriate indicators may help to evaluate, monitor and improve certain outcomes of spatial development. These indicators should be engaged towards a general idea of sustainability and emphasising the linkage among key objectives of policies, as well as improving the traditional framework into a more dynamic and holistic framework. The indicators should also be outcome-oriented to provide a more efficient, effective planning framework and to achieve sustainable development, devising a monitoring system for spatial planning strategies which can accurately reflect spatial planning outcomes in terms of the integration of multi-spatial levels and cross-sectoral policies. Moreover, the indicators developed should (RTPI 2008: 16) "seek to capture the fact that the 'invisible' and 'qualitative' effects of planning contribute to quality of life and quality of places".

In any case, the choosing of indicators in place-based spatial planning should also be carried out in terms of dialogue and dignity. Dignity links to further concepts such as equity and (in)equality. Dialogue brings together a wide range of actors and stakeholders: from the public and private sectors and from across the political party spectrum. It should also involve the public at large as well as others who might be affected by the policy-making and policy implementation, including minorities, neighbouring regions and cross-border stakeholders. Choosing appropriate spatial planning indicators should also help researchers (but decision-makers, stakeholders, investors and the local community too) to evaluate spatial planning proposals better, by improving, for example, their understanding of regional and urban typologies and disparities, and through environmental and social assessment analysis and monitoring (Dželebdžić & Bazik 2011). In short, the indicators should enable dialogue and dignity to be measured in place-based spatial planning.

6.3.1 Place-based well-being and spatial planning

Place-based well-being, as observed in 2.3.1 and 3.1, is an important concept that underlines the local characteristics and circumstances (e.g. geographical, historical, legal, administrative, socio-economic, cultural) of a place in which

well-being is embedded and shaped. Indeed, factors such as those identified by the OECD and looked at in chapter five (e.g. the quality of housing, efficient public transport, good levels of employment), can positively affect people's well-being and QoL. Thus, Anderson et al. (2014: 344) observe that, even though "there are likely to be many variations in the context within the administrative boundaries of a local planning authority", the context is extremely important and "it is worthwhile developing a genuinely local evidence base".

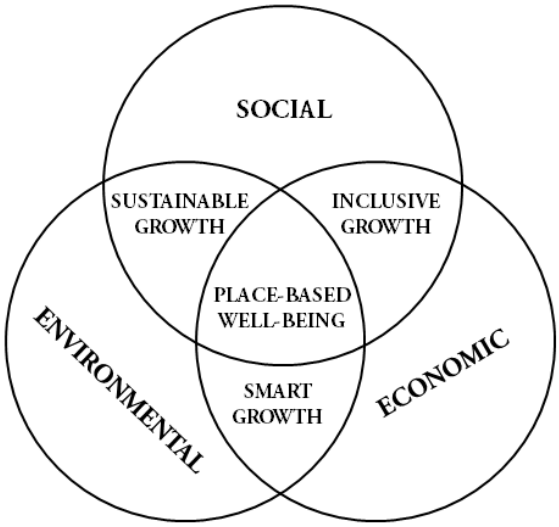


Figure 24: Place-based well-being (author's own)

Although not always visible, spatial planning has an important role in dealing with the complex and changing factors which influence the QoL of people. However, as seen in 2.1.4, spatial planning has been criticised for not handling urban and rural tasks in the best way and many critical topics are still in a phase of experimentation (e.g. scarcity of resources, social inequalities, urban sprawl, climate change). In figure 24 above, well-being is shown to be determined by the integration of the economic, environmental and social components. Thus, in order to achieve effective planning and policy-making, planners and practitioners should address these independent components in a more holistic way. In fact, addressing one of these components in isolation, without considering the interactions between them, can result in inadequate and ineffective policies. For example, adopting sector policies which enhance economic objectives (e.g. smart growth), but ignoring environmental (e.g. sustainable growth) and social (e.g. inclusive growth) objectives, could lead to an increase in social disparities and of environmental degradation, and to an overall decrease in people's well-being (see 5.3.2). Therefore, each component is independent and at the same time interconnected to the others.

Moreover, identifying outcome indicators which could monitor the interactions among the different economic, environmental and social sector policies (thus taking into consideration the intersections in figure 24) could be a

fruitful undertaking in the future. The tables below (table 56 and table 57) show some possible local QoL indicators which could be appropriate for possible future study and research. In fact, these indicators could then be integrated and expanded, depending on the available information in the various contexts.

In table 56, the three economic, environmental and social dimensions are looked at in terms of spatial planning aims and objectives (on the left), certain characteristics of sustainable development (in the centre) and local QoL features (on the right). In table 57, the same three dimensions are looked at first in terms of the local QoL features (the same as those in the column on the right in table 56) and then some local QoL indicators are suggested for each of the local QoL features.

A consultation of citizens and local authorities could help to raise social awareness and to gather information and data which is not always available (e.g. on community well-being). Since attention must be paid to the economic, environmental, social and governance imperatives that constitute the contemporary context for planning, the following indicators could be used to frame the measurement process and implement more effective planning policies.

Table 56: Spatial planning and local QoL features (author's own)

	Spatial planning aims and objectives	**Characteristics of sustainable development**	**Local QoL features**
Economic	Improve economic competitiveness and resilience	- vibrant local environment - sustainable local economy	- employment and unemployment - enterprises - research and innovation
Environment	Improve the sustainable use of natural resources and protection of the environment	- efficient use of natural resources - recycling and reduction of waste - limitation of pollution - protection of biodiversity	- efficient land use - energy consumption - recycling and waste - pollution - air and water quality - biodiversity
Social	Improve social cohesion and social exclusion	- protection of local identity - good health service - enhance culture and education - empowerment and participation of the local community	- education levels - housing - health - accessibility to services - mobility and transport - traffic levels and noise - crime and security - social participation - community well-being

Because economic, environmental and social well-being are strongly interdependent, the adoption of a more holistic and sustainable development should ensure people a better living quality, today and in the future. In fact,

effective planning should be able to satisfy people's basic needs, such as providing good housing, employment, health services, transport and education. In the long run, bad policy-making, planning and governance could bring poor environmental quality, stagnating economic development and exacerbating social inequalities, negatively influencing people's well-being. Thus, spatial planning should support better sustainable development.

Table 57: Local QoL indicators (author's own)

	Local QoL features	**Local QoL indicators**
Economic	- employment and unemployment	- employment rate - unemployment rate
	- enterprises	- the number and success of enterprises
	- research and innovation (R&I)	- gross domestic expenditure on R&I - share of human resources in science and technology
Environment	- efficient land use	- land use distribution (commercial, residential, industrial, agricultural, green areas, parks)
	- energy consumption	- energy use per household
	- recycling and waste	- recycled household waste per person - household waste collected per person
	- pollution	- average number of days above the max threshold (NO2, SO2, O3, CO or PM10)
	- air and water quality	- air quality index (AQI) - temperature and dissolved oxygen (water)
	- biodiversity	- number of critically endangered, endangered and vulnerable species (e.g. Red List Index)
Social	- education levels	- level of education/urban agglomeration dimension
	- housing	- house cost/average gain
	- health	- number of hospitals/urban agglomeration - accessibility to health services
	- accessibility to services	- accessibility to public services (e.g. train, metro, bus stop)
	- mobility and transport	- number of cars per person - km of network/urban agglomeration dimension - punctuality of public service
	- traffic levels and noise	- traffic volumes or flows on different classes of road by vehicle type - percentage of respondents concerned with different categories of noise
	- crime and security	- crime rate/urban agglomeration dimension
	- social participation	- percentage of citizens who are actively involved in at least one local community or voluntary organisation
	- community well-being	- percentage of respondents satisfied with their local area as a place to live

The indicators presented in the table above represent a spatial dimension, helping to understand and differentiate the outcomes which are caused by planning processes and policies. Yet, it is important to keep in mind that, in order to avoid distorting comparisons, also in the future, the time period covered by different indicator data sets is dynamic, changing continuously, and that the different data sets chosen might change in different ways.

6.3.2 The spatial planning and well-being relationship

The following equation has been created in order to illustrate the relationship between spatial governance and planning and well-being, which is one of the main themes of this study.

$$WB = SD \times FC\ (EC + ENV + SOC) + SP\ (PB + TG)$$

WB = well-being
SD = sustainable development
EC = economic factors
ENV = environmental factors
SOC = social factors
FC = framework conditions
SP = spatial planning
PB = place-based characteristics
TG = territorial governance

In a nutshell, the equation shows that well-being (WB) can be achieved, by measuring spatial development (SD), in terms of the economic, environmental and social framework conditions (FC), and the spatial planning (SP), taking into consideration the place-based context (PB) and the territorial governance (TG). Thus, the equation shows the direct interactions between spatial planning and well-being. In fact, people's well-being is positively or negatively affected by:

- sustainable development (SD)

As seen in chapter two (2.2.2 and 2.2.3), the concept of sustainability is strongly related to people's well-being. In fact, if the natural or built environment is harmfully exploited, people's present or future well-being is negatively affected. Thus, endogenous economic factors (e.g. those which enhance a vibrant local environment and sustainable economy), environmental factors (e.g. the efficient use of natural resources, recycling, limitation of pollution, protection of biodiversity) and social factors (e.g. the empowerment and participation of the local community, protection of local identity, good health service, enhancement of culture and education), are all factors which constantly shape the living environment.

- framework conditions (FC)

As seen in chapter five (5.1, 5.1.1, 5.1.2 and 5.1.3) framework conditions reflect long-term trends, providing information on the current state of the economy (e.g.

GDP, GII), the environment (e.g. EPI) and the society (e.g. Gini Index, HDI) of the country. Indeed, good framework conditions can affect people's well-being (see table 55, 6.2.1).

- spatial planning (SP)

As seen throughout the study, spatial planning's aim should be to improve the built environment by promoting good territorial governance, adopting and implementing policies and projects that both directly and indirectly influence people's well-being. Since people's well-being is determined by the specific characteristics of the local setting (thus place-based characteristics – PB) and land use policies, certain factors have to be taken into consideration, such as: the economic factors (e.g. job, income and employment status – EC), the environmental factors (e.g. environmental pollution, the level of resilience – ENV); and the social factors (e.g. the quality of housing, safety, health and education levels – SOC). Moreover, in order to evaluate good territorial governance and spatial planning, other aspects can be considered (e.g. coordinating actions of actors and institutions, integrating policy sectors, mobilising stakeholder participation, being adaptive to changing contexts, realising place-based/territorial specificities and impacts, see 5.3.2 and 5.3.3).

6.3.3 Future research directions

This study has described and analysed the Swiss spatial governance and planning system in order to understand the influence of well-being on planning practices and policies. In particular, the core of the research, presented in chapters four and five, has helped answer the three research questions of the study. These questions (1.1) asked whether there is a link between efficient and successful spatial planning and standard of living, whether the complexity of spatial planning issues and that of QoL can be combined, and whether there is an effective way to evaluate a planning system's efficiency and performance in terms of citizens' well-being.

In answer to the questions, the research has brought together the two concepts of spatial planning and well-being and has shown that combining the basic requirements for sustainable development with the positive benefits for a good life certainly helps to achieve a deeper understanding of development patterns, and to find better and more sustainable ways to design urban planning. Indeed, it can be an effective and holistic way of understanding how to deal with some of the major issues facing societies. It can help researchers and practitioners, as well as those responsible for making policy decisions, including the various public and private sector stakeholders, to appraise and assess urban planning policies and projects more effectively.

The methods used in this research (for example, the application of the OECD criteria, Gleeson's methodological pointers and the TANGO dimensions in

chapter five) have revealed their potential usefulness in the accomplishment of such an endeavour, albeit in relation to a single spatial governance and planning system, that of Switzerland. At the beginning of the study, for example, the author did not know if the spatial planning system was making a positive contribution to Switzerland's high living standards. The research hopes to have shown, through its analysis, how the Swiss spatial governance and planning system contributes to the country's achievement of a high ranking on the international well-being performance scales, thus endorsing Zetter's (2008) assumption as regards the positive contribution made by the planning system to Switzerland's economic prosperity, environmental quality and social stability standards (1.1, 5.2, 6.2.1).

In the light of these answers to the research questions, some final recommendations as regards possible innovations and future directions in this field of study can be proposed.

Firstly, the study shows that more attention should be given to the spatial dimension of policies and policy-making. Indeed, as observed in 5.2.1, the evaluation of spatial governance and planning systems has become essential in today's globalised world so that planners and decision-makers (Janin Rivolin 2012: 78, see also 2017), are able to understand and take into consideration major trends in spatial transformation and governance. Thus, the next step which needs to be taken, and which is increasingly necessary in the globalised world, is to evaluate the effective capacity of spatial governance and planning systems to respond to new challenges, focusing especially, for example, on the economic, environmental and social aspects of people's well-being, as a general objective, but one with which all the stakeholders should be able to relate, given well-being's centrality in the legitimation of spatial governance and planning.

Secondly, such responses can learn from the experience achieved over the years by the various spatial governance and planning systems. Indeed, studies on comparative analysis on spatial governance and planning systems would seem to have achieved a certain maturity in terms of theories, policies and practices (5.2.1), also as regards the evaluation, measurement and the choosing of indicators. Such experience and maturity, as this survey of the Swiss case hopes to have shown, can prove a valuable resource to share among the broader planning community.

More specifically, there has been a transition in recent years of spatial planning issues and methods in Switzerland, where the planning process, as observed above (4.3, 5.2.2, 5.3.1.6), is moving towards a more strategic management of the territory, integrating the concept of sustainability, with increasing use of public-private partnerships and negotiation-oriented planning. Yet, at the same time, the Swiss system manifests its traditional resilience, alongside a capacity to use smart innovation in a post-carbon scenario. The country's use of direct democracy to face land use challenges is particularly relevant in this regard, as can be seen in the 2013 referendum (4.3 and 4.4.1). The

Swiss model of providing accurate data can also be useful for other countries to learn from.

Nevertheless, the capacity to monitor and evaluate the Swiss spatial governance and planning system to meet its current and future challenges should be enhanced by increasing investment so that the regional data can be improved and harmonised, as well as the availability of the data. At the same time, measures should be introduced at the various levels of government to improve sustainable development and well-being. As Pinson (2008: 43) suggests, with reference to the Swiss context, planning at the federal, cantonal and local level should be more strongly associated with "space-related sector policies such as environment, risk management, transportation, and housing policies", in order to be more effective.

Thirdly, because, as has been discussed (3.5.1, 3.5.2, 5.3.1), choosing outcome indicators is closely linked to the specific policy aiming to improve innovation and research, as well as its policy goals, indicators should also be used as a way of focusing attention in policy-making enabling progress to be monitored and circulated (see also Solly 2016a: 197). In short, a set of target indicators could be developed by and across regions which match well with their stage of growth and overall typology. Indeed, the use of well-being indicators, such as those presented in 5.3.2 (see also 6.2.1 and 6.3.1), could serve as a feedback mechanism to control the effectiveness of governance and planning policies. However, such a mechanism should be empowered and fine-tuned in order to achieve a better present and future sustainable development, taking into careful consideration place-based and territorial specificities. One way to do this in the Swiss context, for example, would be to set up an econometric cross-sectional analysis between the cantons alongside a measure of QoL indexes (3.4.3). This would enable a database to be created, together with a model toolkit, which could then be applied in other contexts. A further development could be the use of technological affordances such as GIS to analyse, interpret and accurately display the data collected (3.4.4). It would therefore certainly be worthwhile to carry out a more detailed case study analysis following the model and the criteria proposed here.

Finally, it needs to be remembered that planning, policy-making and governance have to deal with spatial complexity, where place-based factors can directly impact the well-being of a local community. Indeed, the major emphasis today is on sustainability, usually divided into distinct economic, environmental and social components (2.2.2). Sometimes, it seems that it has almost been forgotten that the purpose of spatial planning is to improve people's well-being. And yet, (Caney 2016) people often do not take sustainability seriously, unless it directly affects their well-being, positively or negatively. Thus, spatial governance and planning and, more generally, spatial development, should be more explicitly designed as the tools to achieve well-being as a primary goal.

In the current transitional framework, it also seems important to identify and provide innovative solutions to land use challenges, such as environmental issues,

risk prevention, connectivity, migration; these can provide potential benefits, for example, in terms of smarter research, business link-ups, expanded markets and trade. The spatial governance and planning system should also be sufficiently resilient to withstand pressures induced, for example, by natural events or by changes in political direction. Good place-based spatial planning should, therefore, involve a more integrated and holistic policy-making, introducing resilience planning, measurement and design in order to address the current and future challenges, always taking into consideration the key dimensions of equity, well-being for all and democratic accountability.

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